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ART. I.—*Statistical Medicine or Numerical Analysis applied to the investigation of Morbid Actions:* A Lecture, delivered, by request, to the Medical Class of the University of Louisville, January 17th, 1848. By SAMUEL A. CARTWRIGHT, M.D., of Natchez, Miss.

GENTLEMEN —

I am about to say something on *Statistical Medicine*, or *Political Arithmetic* as it is sometimes called. Some have named it the *Mathematics of Medical Science;* others, *Numerical Analysis*, applied to the investigation of morbid actions. It is defined to be "the application of numbers to the elucidation of the natural history of man in health and disease." The success of numerical analysis, applied to morbid actions, in establishing the doctrine of averages with mathematical certainty, led to the application of the same kind of analysis to governmental objects and gave to political economy the title of a science. The new science of political economy is, therefore, the offspring of statistical

medicine. It is only by extending observations over large masses of people and through a series of years, that the correct and certain data are obtained on which the science of medical statistics is founded. It tests the truth of theories. All medical opinions or practice founded thereon must stand or fall when touched by it. It goes to the very bottom of the well and discloses truth, which often lies too deeply hid to be uncovered by the labor of any one individual practitioner of medicine. Its calculations are founded on multiplied elements, forming the data for the induction of important principles. The numerical method is, in reality, the Baconian philosophy applied to medicine, and reduces it, very nearly, to the exact sciences.

Gentlemen—There must always be diseases and structural derangements *incurable* as a natural incident of humanity. Otherwise man would not be mortal. On the other hand, there must ever be diseases and functional derangements of the organs of the human body readily *curable* by the inherent energies of the constitution. Otherwise all that portion of mankind, deprived of the benefits of medical science, would be threatened with total extinction. The incurable diseases on the one hand, and those which are cured by the efforts of nature on the other, constitute the foundation of scepticism in medicine. Nay, more; it is the ground-work on which empiricism has built its strongest batteries against the regular medical profession. When physicians fail to cure incurable diseases or fail to raise up the patient after he has fallen into an incurable condition, they are mocked by sceptics and assailed with great virulence by empirics.

Again. When patients rise from a bed of sickness by the strength of their constitutions, in despite of the improper interference of quackery, they are published in the newspapers, often by name, and pointed out to the public as living witnesses of wonderful cures performed by the advertised nostrums, and as most fortunate men, women, and children who have escaped the hands of the regular doctors. Whilst these living monuments of the power of the *vis medicatrix*

naturæ to cure diseases, in despite of the very nostrums, (which have got the credit for the cure,) are marshalled to uphold quackery in its unjust pretensions to having made the cures which nature made, the marble monuments of those who have died with incurable diseases under the hands of the physicians, are pointed at as proofs of the inefficacy, nay of the prejudicial influence of the regular remedies of the materia medica as prescribed by the medical faculty. No wonder, therefore, that public confidence should be often shaken in physicians, and that they should sometimes falter and be thrown into jarring discord with one another under the heavy cross-fire which scepticism and empiricism always direct against them, when incurable diseases happen to fall in the line of their practice. While it is admitted that there are two classes of affection—one which will prove fatal under any treatment, and another which will get well under almost any kind of treatment not absolutely poisonous or destructive, there is certainly a very large class of diseases, lying between the two extremes, which can be greatly benefitted by judicious treatment. The total annual mortality, therefore, in a series of years and among large masses of people must be less, when science governs the treatment, than when ignorance governs. The mortality must be greater, in proportion to the *greater* amount of quackery, and *less* in proportion to its decrease. Statistical medicine proves that this is the case.

In morals, as in medicine, we find three classes, very similar to the above. In morals, we find a class of reprobates, answering to the class of incurable diseases in medicine, whom all the clergy and all the religious instruction of the most pious persons cannot reform. On the other extreme, there is another class so amiable, kind, and benevolent, as scarcely to require moral lectures, the promptings of the clergy, or even religion itself to make them dutiful citizens and good neighbors; they are even pointed to by unbelievers as proofs of the inutility of orthodoxy in religion, because such persons generally make good citizens in despite of hete-

rodoxy in religion, or without any religion at all. But between these two extremes there is a very large class of persons who are greatly benefitted by moral and religious teaching. Infidelity has denied this position and called in question the utility of the clerical profession, on very similar grounds to those occupied by scepticism and quackery in calling into question the utility of science in medicine. The clergy have utterly demolished this strong hold of infidelity by proving, through the means of unquestionable statistical truths, that notwithstanding the fact, that there is a class of persons so hardened and reprobate as to be uninfluenced by the moral and religious doctrines of the Bible, and another class so good, as to make peaceable, quiet, and industrious citizens, although deprived of gospel privileges, that nevertheless, the class of individuals, lying between these two extremes, is so large that moral teaching and religious instruction have a most wonderful effect in diminishing the amount of vice and immorality among every people who enjoy such advantages.—Statistical truths prove, that a people, deprived of moral and religious instruction or having only that which the ignorant and bigoted can give, are invariably more depraved, immoral and vicious than those who have the benefit of an enlightened, upright, and industrious clergy; and that the people enjoying such advantages, make the best citizens, are better able to govern themselves and to govern the state, and run in the line of their duties, by moral influences, without being pushed therein at the point of the bayonet. The numerical method, so useful in demonstrating the evils of a want of religious and moral teachers among any people, and the evils of quackery in religion and morals, will be found no less useful in demonstrating the evils of a want of scientific physicians, and the evils of ignorant pretenders in medicine. With religious statistics I have nothing to do, being out of my pathway, which leads into the wide field of medical statistics in search of facts, leading to truths, so plain and convincing, as to enable every one, learned or not learned, to judge impartially, which of the two, science or empiricism,

is entitled to the patronage and support of the public. A few facts often lead to error; whereas all the facts taken collectively always lead to truth. An erroneous opinion, unfavorable to our profession, is often formed from a few facts, indicating a want of success in a limited number of cases, or in some neighborhood of limited extent, or during some short period of time; whereas all the facts, in regard to the practice of physicians, drawn from all quarters and through long periods of time, would at once correct that erroneous opinion

Before going farther, it may be necessary to define what is meant by the science of medicine in contradistinction to empiricism. It consists of two things—science and opinion. True science treats of things known—opinion of things unknown. In other words, medicine as a science, consists of fact and theory—principle and precept. The two must be taken together to make the regular physician, properly so called. Mere facts without being generalized or connected together by reason or theory, are often profitless, or mere stumbling blocks. Whereas theory or opinion, not founded on facts and supported by them in all its parts, is the worst species of empiricism when reduced to practice. The medical principles and precepts, taught at schools, ought not to be mistaken as all the requisites to make a scientific physician. They are only the seed of true science. Labor, experience, and observation should be superadded to make the seed grow and mature into good fruit. Natural talents, a good preliminary education, an early beginning, a love of labor, sound moral principles, and economy of time, are all more or less necessary to constitute the useful physician. The duties of all regular physicians do not consist in wasting their time in investigations, disputes, or bickerings on matters of opinion of little or no practical importance, but in union with one another in the grand and glorious work of preventing and curing diseases, and in relieving pain and human suffering of all kinds. The treatment of diseas-

es consists in doing certain things, and in not doing certain things. Science gives much light, directing what ought to be done or what ought not to be done, but it does not always give as much as is desirable. Hence the ablest physicians have often to proceed cautiously and to feel their way along, avoiding the timidity of weakness and the rashness of ignorance—contenting themselves in humbly learning useful lessons at the bedside, and not in irritating discussions of subjects without utility. In proportion as medical men approach these requisites, (which are not mine, but Hippocrates's the Father of Medicine,) so much the plainer will statistical medicine prove the results of their practice to be more successful than any form or species of empiricism whatever. The great object of medicine being to prevent and cure disease, it necessarily follows that if diseases be prevented, or cured, population will increase rather than diminish. The increase or diminution of population, other things being equal, will go very far to answer the question of the relative merits or demerits of the regular and empirical practice.

Numerical analysis, applied to the subject, discloses the important truth, that all that portion of the human race, residing in those countries or localities which have no scientific physicians, is either decreasing or at any rate not increasing to any extent in number, and that the annual ratio of mortality is very great. Whereas, all those in any and every country, who take the advice and counsel of the regular medical profession, are increasing instead of diminishing in numbers, and the annual ratio of mortality is very small, in comparison to that of those who put their trust in quackery. Our Indians are daily disappearing. They trust their lives, when sick, to ignorant advisers, not having any regular physicians among them. If Indian quackery was as successful in curing diseases, as the science of the civilized man, surely the mortality would not be so great among them as to threaten the total extinction of the race. The white man has occupied this continent but a short time comparatively, yet he has

grown and multiplied and become much greater in numerical strength than the aboriginal inhabitants ever obtained previously to its discovery. The white man brought with him scientific medicine, which the Indian never had. If Indian vegetable specifics and Indian doctors cannot save the Indian race from extinction, in what can they be expected to profit the white man? While the Indian race is decreasing rapidly under the influence of empiricism, the African race, in our southern States, is daily growing in numbers under the salutary influence of science, as practiced by our regular physicians. The African tribes, though most prolific, do not increase in the aggregate population in their native climate. Unprotected by any healing art, the deaths keep pace with the births. But as soon as they gain the protection of science, the mortality is diminished and population progresses. The people of African origin, in our free States, do not increase in population, because there is no established authority to make them take physic when they are sick, being by nature so much opposed to it, as seldom to take it unless compelled to do so by the strong hand of power. As soon as the regular Spanish physicians were driven out of Mexico, that country immediately ceased to increase in population. Quackery reigns supreme in Mexico, and is striving hard to get the ascendency in the United States, not by force of arms, but by degrading the medical profession, and driving men of talent in disgust from it to other pursuits for a livelihood. Throughout all Europe, statistical medicine proves that the mortality among that portion of the population who, from ignorance, prejudice, and the influence of empirics, do not avail themselves of the life-giving powers of the medical science, is about twice as great as among that other portion of the population who trust their lives to the regular physicians, and take no other medicine than the well known articles of the materia medica.

In Paris, during the epidemic cholera, those ignorant and deluded people who, so far from calling on the regular physicians for aid, most uncharitably believed that they had

caused the cholera to get business, suffered incomparably more from the disease than those wiser and more discreet persons, who followed the advice of skilful physicians. The same thing occurred throughout Europe, Asia, and America; the ignorant and the prejudiced in flying to quackery for relief, found to their sorrow, that its performances did not come up to its promises. Jealousy and prejudice against the medical profession have always been marks of broad vulgarity and ignorance.

The makers and venders of nostrums and patent medicines have opened an extensive market for their commodities by fostering that natural jealousy and prejudice of the ignorant against the medical profession, and by representing the regular articles of the materia medica as most noxious or poisonous.

Physicians have nearly exterminated the small-pox from every part of the world where medicine is cultivated as a science, as also that other most formidable disease, the scurvy, which threatened, at one time, to destroy all commerce between nations, and would have robbed Great Britain of her colonial possessions and destroyed her navy, if science had not come to her aid and pointed out the means to cure and prevent it among sailors and marines. Although they have made vast strides in preventing or curing numerous other afflictions, which beset the path of humanity, yet owing to the artifices of the proprietors of nostrums and quack remedies, the ignorant and the vulgar, throughout the world, are made to look upon the regular medical profession with distrust and suspicion; and ignorant, but often good meaning men, are encouraged to set up opposition systems. The effect of all this is to degrade the profession, rendering it scarcely worth the attention of either physicians or empirics to follow it for a livelihood, but to enrich the artful impostors in our large cities and in Europe, who are the fabricators and proprietors of patent medicines and nostrums. The amount paid to these impostors by the people of the Mississippi Valley, more than doubles the amount of sales of the regular ar-

ticles of the materia medica in the Valley. In proof of this, as I am informed by Professor Drake, it has been found impracticable to prevent our western apothecaries from acting as agents or subagents for the proprietors of patent medicines, since such agency, owing to the vast amount sold, brings in greater gains, at twenty per cent., than do the regular articles of the materia medica at a higher per cent. profit, by reason of the smaller amount vended.

Time will not permit me to go into statistical details and give facts and figures already filling many volumes. Every physician can look over them at his leisure in his library. They are as dry and uninteresting in themselves as the details of meteorological observations, until breathed upon by the animating breath of generalization. They then assume a form and shape terrible to the sight of all impostors in medicine. Medical statistics form a striking illustration of the inutility of mere masses of fact, piled one upon another, without order, system, or arrangement. They profit nothing, they tell nothing, until galvanized into life by reason, theory, or generalization. If physicians everywhere would take the trouble to animate them and bid them speak, they would tell a tale, which would elevate the regular profession high in public estimation, and sink quackery so low that it would die out for want of patronage.

Medical men have been so remiss in awakening into life the dead statistical matter, which for ages has laid dormant in their libraries, that it may truly be said, that statistical medicine has done the profession very little good, in consequence of its not having been animated and interrogated on subjects exclusively medical. It has been called into life and interrogated on other subjects, and its answers have been wonderful, and no less true than wonderful. By its answers it has proved itself to be a science in the strict meaning of the term. By it, as by all true sciences, the dark future can be penetrated in a greater or less degree, and coming events, hid from vulgar eyes in the womb of time, can be predicted with almost absolute certainty. Al-

though no one knows or can know, the time when any one individual in health will die a natural death, yet statistical medicine can foretell, with almost positive certainty, when a thousand or ten thousand individuals, in health, will die a natural death. By virtue of this prescience or foreknowledge, disclosed by the numerical method, the various life-insurance companies calculate the amount of profit to be derived from their policies of insurance.

Napoleon called statistical medicine into life and bade it tell him how many men, fit for soldiers, a given population, in a given time, would be able to send to his camp. The answer not being satisfactory, for the want of sufficient data applicable to France, he set about to collect further statistical details. The contributions to this department of our science, under his orders, are highly valuable, in consequence of the great pains taken to guard against errors in the data. To guard against errors from immigration and emigration, he had a cordon of soldiers stretched around a number of the departments of France, containing a population of some three millions of souls. All the inhabitants of the district, under observation, were carefully numbered, and due note taken of their age and sex. After three years of observation the facts were generalized, and the interrogatory of Napoleon was answered by statistical medicine in a satisfactory manner. The mortality was found to be about one in thirty. That is, one individual died every year among every thirty persons; but more than one individual was born every year among every thirty persons; and thus the ratio of increase over the decrease, was ascertained. It is contrary to the order of nature, that population should decrease, unless impeded by some evident local cause. That want of territorial space does not prevent population from increasing, in any country not more populous than France, is proved by the facts just mentioned.

Having alluded to Napoleon's contributions to statistical medicine, I have now to allude to more valuable contributions to that department of our science from a greater man than he

—our own glorious Washington. Early in the first term of Washington's administration, provision was made for the collection of facts, of the most valuable kind to statistical medicine, and immediately carried into effect under his authority. That collection of statistical details, made in 1790, formed a precedent, which has been followed every ten years since that period with a similar collection, under the modest title of "CENSUS." Six have already been taken, and it will soon be time for the seventh. An immense amount of valuable statistical matter has been collected together from every county and sub-division of a county, from every village, town or city, and from every ward of every city, in the whole Union, and published by acts of Congress, forming six very voluminous works, under the unpretending title of "*Census.*" The title does not suggest to the mind, at first sight, any connexion with the medical science. Yet on a little consideration, and particularly by casting the eye over the contents of those massive volumes, (containing the largest amount of authentic statistical details that any country possesses,) it will at once appear to every reflecting mind, that they constitute a sufficient foundation for building up a noble superstructure of American Statistical Medicine, Washington being its founder, as he is also the founder of our political liberties. The same great man, who, aided by his compatriots and the wise men of the age in which he lived, as Franklin, Jefferson, Madison, Hamilton, Adams, Henry, and others, broke up quackery in government, and the artificial distinctions in society, which nourished and fed the political empiricism and founded a new system of government based upon natural distinctions in society and the eternal truths of the Baconian philosophy, (which Hypocrates first taught,) was the very man who laid the foundation of a system of American statistical medicine, destined, ere long, to expel quackery in medicine from the length and breadth of this broad land. The work of Washington in freeing his countrymen from the evils of knavery and empiricism in the science of government, would only have been half complete if his wisdom and foresight had not devised some means by

which they could, in due course of time, be freed from the evils of knavery and empiricism in medicine. Those who do not see how this is to be effected should recollect, that the practice of the medical men attached to the Prussian, French and British armies and navies, is tested with great accuracy from data similar to those furnished by the United States Census. The numerical method, the data being given, discloses the number who die between certain ages, and thus, the relative mortality can be ascertained in each separate locality, and the different localities compared with one another will show, by their greater or less ratio of mortality, (other things being equal,) the blessings of the healing art and the evils of ignorance, imposition and quackery in medicine. I have paid some attention to this subject and have made many calculations to find out the localities where the mortality is the highest and the lowest, and thus be able to trace the location of empiricism and imposition in medicine on the map of the United States.

The manuscript containing the results of my investigation I left at home, in Natchez. I can, therefore, only point out a few of the general conclusions arrived at, which I have retained in memory. Any one, who will take the trouble to make the calculations from the data afforded by the census, must, from necessity, arrive at the same conclusions. Hence statistical medicine is often called political arithmetic. One of the general conclusions demonstrated by American political arithmetic is the most important one, that human life in the Mississippi valley, taken as a whole, is not as safe as human life east of the Alleghany mountains. Thus, it will be found, that out of the whole number of inhabitants between twenty and thirty years of age, a fewer number reach forty, fifty, sixty or seventy years of age in the west than in the east. There is also a great difference in the duration of life in different states of the valley and in different counties in the states, and a difference in different townships or precincts of the same county. Thus, the term of human life is longer in Kentucky than in Ohio—longer in Ohio than in Indiana; and longer in

Indiana than in Illinois. Three great causes operate to shorten human existence in this valley—one is malaria and the too common practice of treating malarious or bilious affections, congestive fever, pneumonia, &c., as the diseases of hyperborean Europe are treated. When the long promised work of Dr. Drake on the climate, diseases, and medical geography of the Mississippi valley makes its appearance, it will, no doubt, demonstrate the error of making the writings of hyperborean physicians our guide in treating a formidable class of hot-weather fevers, unknown in the cold climates, where those authors reside; and thus lead to a better mode of practice by making us independent of hyperborean Europe for books, in the treatment of our endemial diseases. I am sanguine in the belief that malarial diseases, not only admit of a better mode of treatment, but that they may, in a great measure be prevented, and that when the malarial cause cannot be removed, its injurious effects on the system may be, in a great degree, counteracted.

The second cause of the great mortality in this valley is the large amount of adulterated stale and worthless medicine sent here for sale, which will sell no where else. Physicians cannot expect to be successful unless they have good medicine. The too common practice of our apothecaries of purchasing their drugs from wholesale drug establishments, whose proprietors are also the proprietors of nostrums and patent medicines of their own, and who are interested in bringing the regular articles of the materia medica into disrepute, should be broken up, or our physicians should take the management of the materia medica back into their own hands and dispense with the agency of apothecaries entirely.

The third and main cause of the great mortality in this valley, besides what is caused by the direct agency of ignorant and empirical practitioners, is owing to the immense consumption of nostrums and patent medicines of all kinds, by our western people in attempting to doctor themselves. From finding among the patented medicines, occasionally a good

vermifuge or a good aperient in those pills which are made of socotorine aloes, or a good remedy for intermittent fever in those nostrums containing genuine sulphate of quinine, the confidence of the people is often so far *entrapped*, as to make a hap-hazzard use of quack nostrums for all other complaints.

The great and unnecessary sacrifice of human life, from such causes, is not seen so clearly owing to the rapid increase of the population.

On recurring to those valuable statistical details, which we owe to the foresight of Washington, we will find from the data there afforded us, why the population in the west increases so fast, notwithstanding the high ratio of mortality. The numerical method, applied to the data there afforded us, will demonstrate, with mathematical certainty, that the wonderful increase of the population is owing to the women in the Mississippi valley being twice as *prolific*, or nearly so, as the women east of the Alleghany mountains. Thus it will be found, on examination, that for every 1000 women between fifteen and fifty, east of the mountains, there is only on an average about 1200 children, or persons under 15 years of age: Whereas for every 1000 women between fifteen and fifty, west of the mountains, there is on an average about 2200 children or persons under fifteen years of age.

The women in the Mississippi valley are therefore nearly twice as prolific as those in the Atlantic States. If there were no emigration from east to west and the mortality was the same, the west would double its population in nearly half the time of the east. But it does not do this, when we take into consideration the great number it gains per annum and the east loses, by removals from east to west. What it lacks in doing so, is lost by an increase of mortality. As there are 2200 children for every 1000 females west, and 1200 children for every 1000 females east, and as the number of males is nearly the same with the females, it follows that the whole population between fifteen and fifty, should double itself in about thirteen years and a half in the west, and in twenty-five

years in the east from natural causes, provided the mortality was the same in each, and there was no emigration. I have not time to dwell on this subject, but I will say to the young gentlemen of the University, that if they want to find healthy or sickly neighborhoods in which to locate themselves in the practice of medicine, they have only to get the full returns contained in those large works called the *Census*, and find out by the special returns from each county and sub-division of a county. or from each city and sub-division of each city into wards, the proportion of the population under, or between certain ages, and then by calculations and comparisons they can ascertain the most healthy or sickly locality in any part of the United States with almost positive certainty. There is, however, not always the most sickness to be found in places the most obnoxious to life. It is generally the reverse—there being more cures of disease in the aggregate in a salubrious than in a noxious atmosphere. In the latter, deaths are numerous and maladies short in their progress. In the former, though the deaths be few, the indispositions are numerous, and often of long continuance. Morbidity and mortality are often in an inverse ratio. Knowledge is power—power even to choose a good location—a most important matter to a young physician in setting out in life.

The proprietors and venders of nostrums and quack preparations, not content with the profits derived from the impositions practiced on the male part of the community, derive great gains from similar impositions practiced on females, under pretence of curing their particular diseases and preserving their health and beauty. The various dentifrices for the teeth, preparations to prevent the hair from falling out—cosmetics to improve the complexion—lotions to soften and whiten the skin and to remove pimples and other cutaneous blemishes; and numerous nostrums for chronic uterine affections from being used indiscriminately, without regard to the circumstances of the constitution, the general health and particular temperament, not only fail, in most instances, but injure the health and spoil the very beauty they promise to improve or

preserve. Under quack dentifrices to make the teeth look pretty and white the enamel is often destroyed and the teeth are lost entirely. Not knowing that the hair is subject to a variety of diseases, requiring local and constitutional treatment, differing to suit the particular case, the empirical remedies, used indiscriminately, are apt to make the hair fall out or to become rough and uncouth, as to make it grow and become soft and glossy. The Grecian women sacrificed the locks of their hair to Hygeia, the goddess of Health, and daughter of Æsculapius. This practice is allegorical of the necessity of improving the health in order to preserve the hair. There are many diseases of the viscera, which thicken, pimple, blotch or discolor the skin, and consequently many of the lotions and other preparations professing to soften and whiten the complexion, are apt to kindle up some internal disease of the lungs or other viscera. In regard to the astringent and other quack nostrums, so extensively used in the uterine profluvia, they seldom or ever cure the disease. If they succeed in arresting a discharge, without removing the cause, the disease of the uterus is translated to the head, stomach, heart, liver, skin, or nervous system, and not cured. A thousand beautiful complexions are ruined by such remedies. If the disease is not translated, the uterine tissues thicken, when the profluvia, which generally depends on some inflammatory action or irritation, causing a fluxionary movement to the organ, are suddenly arrested by astringents. In consequence of this thickening or engorgement of the uterine tissues, the organ becomes of more than twice its natural weight, and prolapsus is the necessary consequence of this increase, which nothing will cure that does not remove the engorgement, and reduce the organ to its natural size. Pessaries and supporters are only miserable palliatives of a disease, requiring a high exercise of professional skill to prevent or to remove after it has occurred.

Who so capable of improving a complexion and of curing the many diseases to which the skin and the uterus, with which it sympathises, are so subject, as the physician, who has studied

their anatomy, physiology and pathology, and the action and reaction of sympathetic influences, and whose eye can see through those very blemishes and discolorations of the skin, as through a glass, into the derangement of viscera of which they are often the indexes? Who so well capable of giving advice to preserve the teeth, as he who knows the origin of the various diseases of the gums and the general constitutional causes, which make them decay, in defiance of quack dentifrices? About half the decayed teeth in this valley may be fairly attributed to a scorbutic or impoverished condition of the circulating fluids, which is the effect of previous disease, or the effect of an improper diet, or what is most common, the effect of breathing a malarious atmosphere—not to be cured by dentifrices—but by a proper diet,—or by a course of antiscorbutic remedies, or by tonics to strengthen the system.

Nature has been more kind to the American women than to any other portion of the daughters of Eve. To preserve their health and beauty, American physicians have done little or nothing. With the exception of the maladies common to the two sexes, and a few acute diseases, peculiar to females, the American women may be said to have no physician; because for every chronic ailment peculiar to them, which does not absolutely confine them to their room or bed, but which nevertheless undermines their constitution, spoils their beauty and makes them look old before they have reached the meridian of life, they generally give themselves over to empirics of their own or our sex, or undertake to treat themselves by nostrums and quack medicines, or else they let the worm, at the bud of youth, health and beauty, gnaw on and complete its ravages unmolested.

Statistical medicine proves that American women grow old, lose their youthful beauty and perish at an earlier period of life than the women of other civilized countries. There is a cause for this. The medical profession in this country has too much neglected the minor affections and the more slow and insidious ailments peculiar to females, and they, on their part,

are too reserved, distant and shy of the profession to consult it, when not driven to do so by danger or extreme suffering. In fact the great portion of them look upon the faculty as spoilers rather than preservers of health and beauty. This unfavorable opinion has its origin in unnecessary salivations and the neglect, after an acute disease has run its course, to give the necessary advice to repair the ravages the complaint has made, and to re-establish the health, as perfect as it was before, by a proper diet and regimen. When life is safe and convalescence begins, both patient and physician are too apt to fall into the error, that there is nothing more for science to do. The same science which saved life, in an active disease, is often still required to repair any damages the disease may have inflicted on the constitution. Unless this be attended to, the patient is apt to fall into the too common error of supposing, that it was the remedies employed, and not the disease, which injured the constitution. It was never intended that the diseases of females should be left to empirics of either sex, or that they should doctor themselves. By a most wonderful and beautiful provision of nature, as if to save delicacy of feeling, and to do away with the necessity of the first revelation by words coming from them, Nature has stamped the characters of the diseases peculiar to the sex, in their countenance and expression, which none can read but the scientific physician who has deeply studied their complaints. Reading the disease in their countenance, he can generally tell what they complain of, and perceiving that he knows without telling, will be less disinclined to submit to the necessary examinations to ascertain its progress and its particular location. That branch of science called *prosoposcopia*, or the science of detecting disease by the expression of the countenance is very serviceable in the treatment of the diseases of women and children. The latter cannot, and the former often will not, from mere bashfulness, tell what is the matter with them. Diseases, like the passions, have their peculiar expressions—particularly the uterine affections. There is always

something in the expression, look, gait, complexion or attitude, to enable the observant physician to detect such affections at a glance.

By studying a little more attentively this branch of our science, the faculty will greatly benefit the fair sex and at the same time starve out quackery, as fully a moiety of those ill got gains, which feed and fatten empiricism, is derived from the sale of an immense amount of nostrums, fabricated for female consumption, and which answer no other purpose than to commit depredations on their constitutions, spoil their beauty, and swell the bills of mortality.

Statistical medicine is not confined solely to a registration of births and deaths. It registers all unsuccessful plans of treating disease, and the false theories on which such plans of treatment are founded. The most of medical theories are true to a certain extent. But the moment the theory is stretched beyond the narrow sphere of the facts on which it is built, it becomes a false and dangerous guide in medicine. From the prevalence, a few centuries ago, of a fever called putrid, a class of remedies, called antiseptics, came into vogue. They were found to be useful in the complaint then prevalent. This fact gave rise to the theory, that the diseases then prevailing, were owing to a septic tendency of the humors. But soon the theory was stretched beyond the sphere of the facts on which it was founded, and all fevers, and all diseases, even inflammation itself, were supposed to arise from one and the same cause. Hence antiseptics became the reigning hobby for the cure of all diseases. The practice, under the theory, failed of success. But the want of success was attributed to the want of some more powerful antiseptic, and not to the want of truth in the theory. Supposing that the most powerful antiseptics were known to the Egyptians and used by them in preserving the human body from decay, the catacombs of Egypt were ransacked, and the mummies were brought to Europe, and manufactured into medicine, and given as the universal physic. Soon that

terrible enemy of quackery and false doctrines, statistical medicine, declared against the mummy practice. It broke into fragments, and was reformed by mixing other substances with the mummy. One branch of the reformed practice, particularly in diseases of the biliary organs, was proved by statistical medicine to succeed admirably. The medicine which answered so good a purpose was called mummy of mercury. This medicine has come down to us, but we no longer call it by the name it first bore—we call it *calomel.* This antiseptic theory should be a caution against using any one remedy, or a little class of remedies, in all diseases indiscriminately.

Steaming is very good in its place. I had often steamed patients before I ever heard of Thompson, the steam-doctor. But when we apply steam in all cases, we fall into the same errors, as those who gave antiseptics in all cases—or bleed and give calomel in all cases—or Cooke's pills in all cases—or gum water in all cases. I am fond of roots and herbs from our woods, and had long used them before I ever heard of Botanical physicians. But I should be very sorry to be tied down by any theory to the exclusive use of roots and herbs. I have seen the lancet do good and save life in many inflammatory diseases. I would think it morally wrong to stand by and see a patient die in all the agonies of an acute inflammation, when timely bloodletting would save him, and let my hands be tied by a theory against bloodletting founded on its abuses. I have seen lobelia and red pepper abused. But I have not been deterred by such abuses from using those articles in cases where the experience of the world before me and the world around me, added to my own, had proved them to be the best remedies. I learned the virtues of red pepper from the ancients, and from our West India practitioners. The virtues of lobelia I have picked up from a variety of sources—steam doctors among the rest.

We all know, from the truths revealed by statistical medi-

cine, that physicians in all ages and countries, as a general rule, are not well qualified to prescribe for themselves.—When they do prescribe for themselves they are more apt to die than when they are prescribed for by other physicians. Dr. Rush died in consequence of undertaking to prescribe for himself. Yet in the face of this important fact, we see catch-penny books, ever and anon, issued from the press, leading the people to believe that every man can be his own doctor, and every *woman too!* For instance, there is just published a work called 'the Married Woman's Private Companion,' intended to make women believe that each one can cure herself, if she will read that work, and take the patent medicine therein recommended, at five and ten dollars a box. There is not a word in the book which is true that physicians did not know, and nothing in it that it would do females any good to know. Besides it is calculated to frighten them by dwelling on Cæsarian operations, and mal-formations, as if they were common occurrences. It is calculated to mislead them into the belief, that from the anatomy and physiology it reveals, with the help of the patent medicines and a few simples, they can become their own doctors. If the fact were known, that the ablest physicians, with all the experience and lights of science around them, cannot safely doctor themselves, how plain would it appear that no woman can safely doctor herself by such a book and the remedies therein advised. The diseases it proposes to cure so readily, and the anatomy and physiology it proposes to teach so easily, are the most difficult subjects in the science of medicine. This, however, is only one of the numerous works calculated to deceive and mislead the public into the fatal error, that man, as well as woman, can be their own doctor. Physicians have done very little to dispel this delusion. It is a delusion which greatly increases the mortality in this valley. Whether they ought to make any attempt or not to enlighten the public mind on a subject of such importance, I do not pretend to decide.

My object is accomplished, gentlemen, in calling your attention to the subject of statistical medicine and in reminding you that you have a light in that department of our science, sufficient to dispel the gross darkness which broods over the public mind on everything connected with the healing art, if you choose to uncover it.

ART. II.—*A brief Account of a Fever which prevailed in the neighborhood of Charlotte, Tennessee, during the Summer of* 1846. By JAMES M. LARKINS, M.D., of Charlotte, Tennessee.

Charlotte stands on the conglomerate, or red sandstone, which contains the iron ore worked on the Cumberland river. The surface of the country is rolling, and from the hill sides issue innumerable springs of fine limestone water, this rock underlying the sandstone which forms the matrix of the iron ore. To the eye, no source of malaria appears. No ponds of stagnant water exist, the streams have good currents, and there is no marshy ground in this district of country.

The summer of 1846 was hot and rainy, the thermometer rising repeatedly as high as 90°, and for many days in July and August ranging from 80° to 85°. Thunder storms were unusually frequent, and often violent. We counted five or six trees which had been struck by lightning during a single one of these storms in the neighborhood of Charlotte.

Of the fever which made its appearance in the midst of this weather, the following were the most prominent symptoms:—Pulse but little altered from its natural state, soft, compressible, and only slightly increased in volume; cheeks flushed; countenance not expressive of pain or disease; intolerance of light; skin soft. The patient generally lay on his back, with his legs drawn up in the bed, and his eyes closed; but the latter was not a uniform attendant, some of the patients sleeping but little. In nearly all, the sense of

hearing was impaired. There was neither craving nor loathing of food, but when presented the patient was generally disposed to partake of it. The tongue, at the access of the disease, was pointed, and covered with a white fur; but in the progress, it becomes rough, chapped, and coated with black, and sordes also appeared on the teeth. The patient, after the fever was fully established, never complained of pain, and invariably, when asked how he was, answered that he was better. Generally on the second or third day some abatement of the symptoms was experienced, but after this the disease progressed, without any appreciable intermission, until the eighteenth, and in some instances, the twenty-fifth day.

The parotid glands suffered enlargement in many cases, and frequently suppurated. It was during the stage of the disease when this suppuration was going on that the patients were in greatest danger. If neglected, or improperly treated, not a few died at this period. The duration of the fever, from its access to the stage of decided convalescence, was generally about six weeks.

Treatment.—The circulation being but slightly affectod, bleeding was not often practiced, and when resorted to the effects were not satisfactory. Emetics were rarely given, and, except where the case was of a clearly bilious character, did not appear to be beneficial. My favorite remedy was a combination of calomel and ipecac., generally three grains of each, repeated according to circumstances. When given as often as once in three hours, this dose seldom excited nausea or vomiting, and ptyalism very rarely followed; but a relaxation of the surface took place, and subsequently, gentle action of the bowels. As a refrigerant, nitrate of potash was administered, and when the disease manifested a local tendency blisters were resorted to with advantage. Cold water was freely applied to the head during the inflammatory stage of the fever, and the relief afforded by it was manifest.

The acute sufferings of the patient commenced with the secondary symptoms; namely: with the inflammation of the parotids. For these, emollient poultices were applied, and the matter was evacuated as soon as the tumors began to point. During the suppurating stage it was necessary to support the patients by tonics, stimulants, and nourishing diet. The vegetable bitters were administered in conjunction with wine and brandy. Our indigenous tonics, prunus Virginiana, cornus Florida, and liriodendron tulipifera, were found equal to any others.

In looking back over the history of this endemic, I am not able to recall to mind a single case which seemed to have been arrested by medical treatment, and I am not sure that the effect of treatment was in any instance to bring the malady to a speedier termination than it would have attained without it. But while I admit thus much, I am fully persuaded that the effect of treatment was to conduct to a happy termination many cases which, left to themselves, would have had a fatal issue. This opinion rests upon the fact that many patients who took no medicine died, and that a fatal termination was rarely witnessed where judicious medical aid was enjoyed by the sick.

This fever was evidently of the typhoid type, and it is worthy of remark that this form of fever seems to be taking the place, to a great extent, of the bilious remittent fever which prevailed so long in all parts of the Mississippi valley. Typhoid fever would appear to be pursuing a steady, though slow march, from the northern to the southern parts of the United States. Long after it had been the endemic of the New England States it was unknown in Tennessee. This change involves very grave consequences, for if the practitioner attempts to treat the new form of fever according to the system adapted to our former endemics, he will be unsuccessful. The lancet and quinine he finds inadmissible, and in truth the physician can do but little more than palliate symptoms, and support the patient through the disease.

Charlotte, March, 1847.

ART. III.—*Notes on Medical Matters and Medical Men in Paris.* By DAVID W. YANDELL, M.D., of Louisville, Ky.

On Induced Abortion in cases of Contracted Pelvis. From the Clinique of Professor Paul Dubois.—Among the various means which the obstetric art opposes to the dangers incident to contracted pelvis, there is one which consists in the induction of the premature expulsion of the fœtus.

In most cases this expulsion is solicited at a period of pregnancy sufficiently advanced, that, the fœtus being viable, the operation may not prove unavoidably prejudicial to the preservation of its existence; the process thus effected is called *artificial premature labor.*

In some cases, however, it has been thought necessary to bring on this expulsion during the very first periods of pregnancy, when the fœtus has not yet acquired the necessary development for the performance (if it may be so termed) of extra-uterine life; that, is during the first seven months, the operation being then named *induced abortion.*

Artificial premature labor is, in general, only resorted to in cases of moderate contraction of the pelvis, and has for its end the preservation of the life both of the mother and child. It was long before this process, thus understood, was admitted into science—but at this day, its usefulness and justifiableness can no longer be the subject of serious contention.

The subject of this memoir, *induced abortion*, is on the contrary, only applicable to cases where the contraction of the pelvis is extremely marked; its inevitable result is the sacrifice of an undeveloped ovum, either in the embryotic or fœtal stage; but it is resorted to with the hope of saving the mother. It will be easily understood, from what has just been said, that this operation would not be quietly admitted into practice; that it met with very decided opposition; that many most serious objections were urged against it, and that its very profound abuse intimidated the moral sense of many

accoucheurs. Indeed, the question we now propose investigating, is from its very nature one of the most serious and delicate topics of discussion that can be found in the whole science of obstetrics.

The first advice for bringing on abortion with the view of avoiding certain dangers of full-term parturition, is now very ancient. The following prescriptions from Aspasia, a celebrated Greek courtesan, as quoted by Ætius, may be found applicable to our subject, so far, at least, as they were intended to prevent the perilous consequences arising from obstacles esteemed insurmountable by the natural efforts during labor. We find in Ætius the following:

Quandam mulieres etiamsi concipiant, in partu tamen periclitantur, sive ab uteri parvitaten ut *ab id* factam perficere non possit, sive ab colli ejusdem angustiam, sive quod tuberculum aut tale quiddam in ejusdem ostio exortum est quod partum impedit; atque hoc sane optimi fecerint si a partu omnius caverint. At si conciperint satius et factum corrumpere quam excidere.

And a little further on—

Si mulier at gignendum factum nepta per negligentiam conciperit, vehementissmis motibus uti jubeatur *et ut saliat* ac *gravissima onera levet* et *ut decoctionibus urinam* ac *menses prælectantibus* atque *alvum sub ducentibus assidue utatur* . . . quod si hoc nihil proficerit ad *validiora auxilia* pergendum erit, etc., etc.

I have only given the smallest part of the numerous means prescribed by Aspasia for inducing abortion in the earlier periods of pregnancy; the list is very long and exceedingly curious, and it would appear that the knowledge of this matron on the subject was in no wise inferior to the actual ideas entertained by the medical world at this day. A fact very worthy of remark is that Aspasia used to teach and recommend, in cases of inability to bear children up to the time of pregnancy, on account of malformation of the generative system, such means as modern writers would never dream of. But I shall not detail them, but merely refer the curious to

"*Actii medici Graeci contractæ ex veteribus Medicinæ Tetrabiblos per J. Cornarium Lugduni*, 1549, pp. 961–2–3. Sermo xvi., Caput xvi., et sequentia," and after a few more words concerning the history of the induction of abortion, pass to the more practical portion of our subject.

The induction of abortion, considered as one of the scientific resources of our art, fell into disuse and was rejected in times posterior to Aspasia, it not being spoken of by authors of the middle ages. We do not find it advised in any work posterior to that of Ætius, and it had probably fallen into total oblivion, when in the course of the last century Wm. Cooper, at the close of the relation of a case of Cæsarian section, which had proved fatal to the mother, submitted the following question to Dr. Hunter, to whom his paper was addressed:

"Before I conclude," says Mr. Cooper, "allow me to propose the following question: In such cases where it is certainly known that a mature child cannot possibly be delivered in the ordinary way alive, would it not be consistent with reason and conscience for the preservation of the mother, as soon as it conveniently can be done by artificial means, to attempt to produce abortion?"—*Med. Obs. and Inquiries*, vol. iv., p. 271.

This new scientific principle, elicited by Mr. Cooper, was broached at a moment when the attention of the medical world was wholly occupied by a prior question of the same nature; viz: *the induction of premature labor*, which had already been approved of and sanctioned in a consultation of the most eminent men of the time, held at London in 1759, for the purpose of considering the moral rectitude, and the advantages which might be expected from this practice.

"Induction of premature labor" being applicable to a greater number of cases than "induced abortion," certainly offered more interest as regarded its results, and this explains why the former had been resorted to a certain number of times, and had already given rise to much discussion, and to numerous interesting publications, while the latter remained station-

ary—a mere proposition laid before the inattentive medical world.

On the other hand, there were a few individuals who, considering the disastrous results attending the Cæsarian section when performed in England, and seeing no chance for the "induction of premature labor" in certain cases of extremely contracted pelvis to save the child's life, and very little probability of its preserving the existence of the mother, on account of the preposterous and mangled operation she was obliged to undergo, seriously turned their minds to the adoption, and their skill to the practice, of the principle suggested by Mr. Cooper. Among these men John Barlow stands the most prominent—(see his letter in Medical Facts and Observations, vol. viii., pp. 187 and 192. December 16th, 1779.)

In Germany the process was accepted and rejected by practitioners equally celebrated—Paul Scheel, Mende, 1802; J. P. Weidmann, Carl Wenzel, 1818, etc., etc.

In France, the proposal of this new operation was, at first, the particular object of examination and free discussion. What could we expect to find in favor of "induced abortion" in a country where Baudelocque and his school had severely condemned, as immoral, the induction of premature labor, which they very unscientifically styled "an abortion?"—(see Capuron's work.) In fact, the attention of the French school was so completely engaged with the refutation of the principles on which the induction of premature labor was founded, that the proposition of *induced abortion* was left so completely in the shade that one is tempted to believe, that it escaped entirely unknown.

Notwithstanding the opposition of Baudelocque and of Capuron and their school, we see Foderé in 1813, Marc in 1821, and Velpeau in 1829, declare in favor of the justifiableness and the morality of induced abortion in certain instances.

The question might still be considered as having been an open one till Prof. Dubois proved to his colleagues of the French

Faculty, and to the world, even in a more satisfactory and conclusive manner than had been proved by Denman in the question of premature labor, the moral rectitude and the legality of the principle on which was based induced abortion in cases of contracted pelvis.

Before relating the case of induced abortion because of malformation, that we have lately witnessed at the clinique, I believe I shall not be performing a thankless task if I quote some of the very valuable remarks contained in Professor Dubois' memoir on this subject to which he referred when lecturing on this delicate point a few days ago. The memoir was published in the Gazette Médicale in 1843.

"Those who oppose artificial abortion have alleged that amongst the women in whom abortion is induced by any kind of violence, there are few who are saved or who do not run the greatest peril; that when they do not die from the primary accidents, they generally fall victims to consecutive accidents of a still more serious nature; that the resource of the Cæsarian section, by which one woman out of three, on an average, has been saved, is by far preferable to that of induced abortion; that by no means whatever can the accoucheur possess over the fœtus an absolute right of life or death; and least of all, that to cause the death of the fœtus in utero or to expel it therefrom by any means before the period at which nature endows it with the power to live its own life, is nothing less than a crime punishable by the laws.

"On the other hand, the partisans of the contrary opinion have answered that under certain very serious circumstances, when it would be proved that the mother and the child could not undergo without absolute danger, the process of parturition at full term, it is by no means immoral to bring on abortion, and between two unavoidable evils to choose the least; that in so serious an alternative, the imperfect or puny organization and existence of a fœtus scarcely endowed with any physical sensibility, enjoying no moral faculty, unconnected

as yet with the world by any external tie, cannot be compared with the existence of the mother whose faculties are developed, who is bound to society by numerous ties, and whose preservation, for all these reasons, is assuredly the most preciously to be taken into consideration.—(*Foderé, Med. Legal*, vii., p. 63).

Professor Dubois assumed the ground that the arguments here brought forward by both parties were not of a nature to elucidate and far less to solve the question at hand. Among those contrary to the principle, he would show that the one declaring it to be inconsistent with our moral duties, was based on an erroneous, or rather exaggerated conception of the law, and that among the reasons urged in favor of the adoption of "induced abortion," some had appeared to him rather of a sentimental than rational nature, and therefore, although they merited his personal approbation, he thought they possessed no positive value in a discusion of this kind.

Professor Dubois then proceeded to examine what had been termed the illegality and the criminality of "induced abortion." He said that although he was very far from being desirous of diminishing in any way the scrupulous sentiments inspired in the Profession by a rigorous respect and regard for the laws, he felt it his duty to place the question on ground where it might be free from all those moral considerations, which in the minds of many would render the scientific discussion of the principle very difficult to enter upon at the present momemt.

Professor Dubois then remarked that abortion as it is understood, pursued and punished by the laws, is a secret art, criminal to the very mind of him who brings it on, as it is to the conscience of the woman who solicits or suffers the operation to be performed. Abortion induced by scientific means, on the contrary, is accomplished openly (*au grand jour*) with the intention of saving one of the two lives brought into jeopardy—an act which ought not to be offensive to the conscience either of him who induces abortion, in

those cases, or of the unfortunate creature who consents to undergo the operation. And then, again, abortion is not the only process of our art that needs to be legitimatised by the intention of the operation. The wounds, the mutilations inflicted daily by the hand of the surgeon, and which are sometimes resorted to for the purpose of removing a suffering that might have been borne, and put health, nay sometimes life itself, in very great danger, would they not be considered criminal if they were inflicted by other hands but ours, if their execution originated in a guilty motive? However, the law has made no distinction in these cases—it is sufficient that the legislator should have placed the one under the denomination of *crimes*, and that the other should be rationally made distinct from them. Moreover, among the mutilations effected for surgical purposes, there is one nominally foreseen and very severely punished by the law—that is castration. Well, no distinction was made by the legislature, and it was, no doubt, deemed sufficient to indicate criminal castration, in order that all other kinds of castration, scientifically performed, might be the exception to the law.

Having thus dwelt at some length on the origin and progress of the principle on which induced abortion is founded, let us now turn to a more practical theme, and endeavor to elucidate the somewhat delicate question, in what cases ought this operation to be performed.

Leaving out of the present question the consideration of *tumors*, that may obstruct the pelvis and may be displaced, punctured, or removed with more or less facility; leaving out of our investigation those *diseases* of pregnant females (diseases of the circulatory system, the abdominal tumors, dropsy of the amnios, etc.,) for which cases the induction of premature labor may be deemed necessary and against which induced abortion would prove a useless remedy—for the reason that at an early period of pregnancy the above mentioned diseases have not generally acquired a dangerous nature,—we must limit our attention to cases of *contracted pelvis*, (similar to that actually under our observation at the

Hôpital des Cliniques, and lay down the conditions under which, the mother's life being incompatible with that of her offspring, we feel ourselves under the dire obligation of attempting to save her life at the expense of that of the fœtus. Such cases are not numerous, and may be defined as follows:

Cases in which the pelvis is so far contracted as to leave no possibility of extricating the fœtus per vias naturales, even by diminishing the size of its head, and where no other means remain for delivering the woman of a living child but the Cæsarian section.

The above condition exists when the smallest diameter of the pelvis is under two and a half inches, (French measure.) From two and a half inches down to two inches, the extraction of the fœtus can certainly be effected by embryotomy; but if we come to consider the cases of this nature, we shall be easily convinced that the extraction of a dead fœtus under these conditions is no less dangerous to the mother, than the Cæsarian section itself. Symphysiotomy would endanger the life of mother and child to about the same degree. Artificial premature labor would not be followed by a better result, the only advantage of the latter operation being in such cases, that the division of an incompletely developed fœtus would be somewhat easier to effect, and its extraction less injurious to the mother.

Now that we have laid down the rule as to the period of pregnancy at which it is best to act, the mother being in the condition to which we have alluded—and under what degree of contraction of the pelvis we are called upon to induce abortion, we shall, instead of reviewing the various methods used for this purpose, which I need scarcely remark are the same as those consulted in cases of induced premature labor, proceed to the case of the dwarf actually under the care of Professor Dubois, at the Hôpital des Cliniques, and learn from this most valued authority the reasons that influenced his choice of induced abortion, and the several means by which he endeavored to effect his purpose.

Case.—Julie Gros, ætat. 30 years,—laundress. This woman measures only three feet one inch in height. Great distortion of the lower extremities; articulations knotty.—The trunk is short; head large; chin very prominent; complexion dark; expression very intelligent. Her general health has always been good, with the exception of some intestinal irritation three years back.

In September, 1845, she came to the Hôpital des Cliniques pregnant for the first time. Dr. Cazeaux who, at that time attended the wards in Professor Dubois' absence, learned from the patient that she had menstruated for the last time in June preceding, and after having ascertained the condition of the pelvis, he resolved to induce abortion. Dilatation of the os uteri was effected by means of prepared sponge (that is a conical piece of sponge tied up very tight and destined to increase in bulk by being in contact with the mucous membrane of the cervix.) After this and also the administration of ergot of rye, the membranes were ruptured on the 15th October, 1846. Abortion then took place without difficulty, at about four and a half months. The patient rapidly recovered, and left the hospital on the 11th day, proffering her oath that she would never be again found in the same predicament. Notwithstanding this, however, in November, 1847, Julie Gros returned to the same ward, pregnant for the second time. Again she came to solicit of Professor Dubois his intervention to effect her delivery, under circumstances very similar to those of the year previous. Her menses had not been seen since the 20th of September. Special reasons made the woman believe she had become pregnant on the 20th of September. Very soon after that date she had remarked certain sympathetic symptoms of pregnancy.

On the 2d of December, Professor Dubois pronounced her to be gone with child about two months and twelve days. He remarked that the determination he should take must depend upon the state of the pelvis. The conjugate diameter was measured by the finger; it was found to be two inches and one line in extent. The conjugate diameter being so

short, Professor Dubois examined the resources at his disposal, which in the actual state of things were as follows:

1st. Induction of abortion up to the seventh month included.

2d. Induction of premature labor.

3d. Operation performed with the view of enlarging the pelvic diameter. *a.* Pelviotomy. *b.* Symphysiotomy.

4th. Mutilation of the fœtus, or embryotomy.

5th. Cæsarian operation.

Then followed the discussion concerning the operation to be performed. Some of these processes, said Professor Dubois, must be excluded; for instance, induction of premature labor. For it to prove completely effectual, it would be necessary to have a viable child, and moreover that the child be able to pass through a pelvis, the conjugate diameter of which measured twenty-nine lines. The thing was impossible. Premature labor induced in this case, would be equivalent to induced abortion. In other words, we should have the trouble of inducing premature labor without being rewarded by the ordinary beneficial results which characterize that operation.

Was pelviotomy to be resorted to? or either of its two modes of execution, pubiotomy or symphysiotomy? We shall simply remark that in such contracted pelves neither one nor the other operation could sufficiently enlarge the cavity for the reception and passage of a fœtal head without doing great injury to the woman. The rupture of the sacro-sciatic ligaments would certainly follow symphysiotomy. Pubiotomy was still more out of the question with regard to its practicability.

Mutilation of the fœtus? At the term at which this pregnancy had arrived, Professor Dubois said that it would be a dangerous operation for the mother, and moreover, it would be a difficult undertaking for the accoucheur.

The choice therefore rested between two operations—the Cæsarian section and induced abortion. Let us, said Professor Dubois, make the discussion bear on this point; let us

weigh well the reasons for and against the chances offered by each of these operations, bearing in mind the while, the personal benefit and social importance connected with the question.

The advantages of the Cæsarian operation are the following: No particular structure being opposed to its performance in this case; its being, according to statistics, successful in one case out of three.

Now, on the other hand, continued Professor Dubois, as to statistics, the cases reported are generally the fortunate ones; all cases of this kind having been published, while it is well known that most of the unlucky cases have never been made public. As an instance of what he advances the Professor remarked, that the seven unsuccessful cases that had occurred in his practice had not all been published. And then, again, it is a fact that the results of the Cæsarian operation differ widely, according to the countries in which it is performed. Thus it happens that to our knowledge there is only one successful case out of all those practiced in England. If we turn to France, where the operation has been more frequently performed than elsewhere, we find that at Paris, not one of Professor Dubois' operations has resulted successfully to the mother. We may therefore infer from this circumstance, that not a single mother is likely to escape in this city. As for the children, those who survived for a certain time or continued to live, owe it almost entirely to the excellent care taken of them—the others, abandoned and neglected, have been lost sight of, and no doubt have run all the risks incident to their condition, which by the fact of their premature birth are rendered far more serious than those of children coming into the world by the process of nature. In conclusion, we may say that the Cæsarian section when performed in Paris is fatal to the mother, and that the children who in cases of this kind are often abandoned very soon die.

In the present case the woman says she would not be able to keep her child. As to bringing up the child himself, Pro-

fessor Dubois said that he had already reared two individuals whom he had ushered into the world by the Cæsarian section, one of whom was a fine tall soldier at this time, but that as to adopting a third child, it was an undertaking of rather too delicate a nature to be immediately decided upon.

Finally, there remains abortion. Here Professor Dubois dwelt at some length on the subject of the first part of this paper; the high importance of the question, the moral rectitude of the principle we have adopted according to scientific rules, etc.

Speaking of the various processes hitherto employed to effect this end—abortion—he remarked that the criminal one consisted in the administration of substances acting on the uterus by determining congestion in that organ, or else in operative processes, such as perforation of the ovum.

His opinion was that one of the best, as well as the most scientific methods, was the one resorted to in cases where it was wished to induce premature labor—that is the dilatation of the cervix by prepared sponge, (Kluges' method.) This method he esteemed much preferable to that acting on the principle of rendering the uterine system congested, as by warm baths, ergot of rye, etc., etc. If the former plan was not effectual, the old method then presented itself; namely, the perforation of the membranes. All these procedures tended to one and the same physiological end: to wit, the inducing of uterine contraction, whether we choose by the last process to evacuate *all* the amniotic fluid, as Clarke used to do, or only a small quantity of the waters as Meissner says he does now, by means of a curved sound conducting a trochar. To either of these two procedures Professor Dubois would prefer employing an intermediate one—Hamilton's method—which consists in the introduction of the finger into the os uteri and the detaching of the membranes from their connexions in the neighborhood of the orifice. This method has of late been somewhat modified by Professor Simpson,

of Edinburg, who uses a curved sound of large calibre to effect the detachment of the membranes from the corresponding uterine surfaces. Before, however, having recourse to either of these methods, Professor Dubois determined to try the effect of galvanic shocks on the uterus, with the view of producing primary contraction of that organ, or its secondary action, after having killed the fœtus by the shocks, and its acting as a foreign body *in utero.*

The apparatus used for this purpose was an electro-magnetic machine. The conductors being placed alternately on each side of the uterus through the abdominal parietes; again one on the fundus and the other on the cervix, *per vaginam*, the shocks were gradually increased, during one or two minutes, till they became insupportable. The experiment was renewed twice--the third time the patient was very refractory, and refused to inhale chloroform to allay the pain, when Prof. Dubois concluded to postpone the further trial of the galvanism for a fortnight, in order to ascertain if the uterus still continued increasing; finding that it did so, and being unwilling to inflict any more suffering upon the patient, who still continued exceedingly intractable, he entirely renounced this method, which he was the first to apply with a view of inducing abortion, and which he believed failed to produce its desired effects in this instance because of the want of power in the instrument used, and the indocility of the patient. On the 8th of January, 1848, he proceeded to accomplish his purpose by separating the membranes from the lower part of the uterus, which he effected by the introduction and gentle rotation ,within the cavity of the uterus, of a curved sound of large calibre, avoiding, as much as possible, the rupture of the amniotic bag, which he hoped would be very effectual in aiding the dilating effect of uterine action.

Professor Dubois operated in presence of the class at 9 o'clock, A.M. A small quantity of blood was lost during the operation, and gave rise to a belief on the part of the Professor, which the inspection of the placenta afterwards

proved to be well grounded, that this body had been lacerated by the sound. The membranes, however, were not ruptured. During the day, uterine contractions began to be felt at long intervals. In the course of the following night, and particularly in the morning of the 9th, the pains set in pretty regularly and strong. They continued so during the day, and at 5 o'clock, P.M., dilatation being very nearly complete, the bag of waters was opened; delivery took place spontaneously between 5 and 6 o'clock, about thirty hours after the operation.

In his clinical lecture of the 11th January, Professor Dubois exhibited the placenta, a portion of which appeared lacerated, owing, no doubt, to the action of the sound which had been employed. He remarked that the labor had lasted a longer time than in the average number of labors, but in this case, labor was not effectually established before 5 o'clock on the morning of the 9th, the true pains having lasted, therefore, only about twelve hours, the time generally allotted to natural labor. In this preternatural case, said Professor Dubois, the first pains had been employed in preparing the cervix to dilate, as it had been surprised in a state quite unmodified, with regard to the process which was about to take place, and in which it had so important a part to perform. The fœtus came by the vertex, and pushing the placenta before it—another proof that the placenta had been detached during the artificial destruction of the uterine connexions, and had made its way to the orifice before the fœtus.

The patient has fared pretty well. Some abdominal pains and fever were present the second day after confinement. Two applications of ten leeches each were sufficient to restore a healthy condition. The sympathetic phenomena in the breasts which were noticed to be attempted, were more than realized on the third day, but very soon subsided. Things have continued to go on well, and the patient was expected to leave the hospital this morning, January 21st.

Few of the physicians of Paris appear to me more interested in the cure of diseases than M. Trousseau, and there is not among them one whose clinical lectures afford more wholesome and valuable therapeutical instruction. In one of his late lectures at the Hôpital Neckar, among other things, he made some remarks on *erysipelas in new-born children*, which I propose to report.

Erysipelas in new-born children, the Professor remarked, is a disease of frightful gravity; it attacks all classes indiscriminately, the rich and the poor, and it is almost invariably mortal, whether the children be in the condition of the most prosperous health, or whether they be cachectic. I have seen only three infants recover during the last nine years; the one was five months, the second three months, and the last a year old. All save these have died.

Although it is our object, this morning, to call your attention especially to erysipelas in infants, we may state to you certain divisions depending on the age of the patient, which experience has taught us to regard as being about as generally correct as general laws usually are: In the infant, then, (from one to two months of age) erysipelas is excessively grave; later it offers less gravity; and finally, towards adolescence, it does not differ much from that of the adult. You see a child who is not sick; the mother begs you, however, to examine it. She has seen in dressing it something not altogether natural about its genital organs, and she wishes you to look at it; you do so, and find, if it be a boy, the penis a little swollen and red; if it be a girl, the vulva slightly tumefied; detecting but this, you do not suspect its gravity, and hence do not distrust yourself. At your visit the following day, you are surprised to find the parts tumefied, the penis, the scrotum, or the vulva, swollen; there is no fever, no loss of appetite; you believe it an insignificant affair, and order a cataplasm. The next day the swelling extends a little towards the umbilicus, the thighs, the pelvis; this begins to be unpleasant; the infant now cries a little, sleeps a little less than usual, but does not vomit; it sucks, has no fever, no

cough, and no cerebral phenomena. When you return to your little patient, you are struck with its discoloration and pallor; it cries, it has not slept, it sucks with avidity, because it is thirsty; but there is neither diarrhea, nor vomiting; the swelling gains the thighs and the legs. The next day the paleness is greater; the infant no longer sleeps, and does nothing but cry; the erysipelas reaches the trunk, the feet, attains the neck, spreads itself, and it is rarely that death does not supervene the sixth or seventh day.

I have spoken to you of this open and undisguised march of the affection, in order to strike your minds by a description which shall cause you to mistrust yourselves, and prevent your feeling a deceitful security while the child is dying.

The prognosis is always very grave, and the reason is that the erysipelas is often accompanied by a peritonitis which sometimes resembles the puerperal species; it does not supervene immediately in the infant, but comes to cover the erysipelas; arises at the end of four or five days, and kills in twenty-four hours. It is a serious, indeed, an invariably mortal disease.

Furthermore, there very often exists an umbilical phlebitis; the umbilical vein becomes inflamed, and the veins of the liver become filled with pus. The infant is thus placed in the most alarming conditions that any one attacked with erysipelas can be; in fact, if in individuals laboring under deep-seated abscesses, gangrene, phlebitis, etc., an erysipelas supervenes, you announce death, and the patient dies. In the child, something analogous to this occurs; the umbilical cord becomes detached as a gangrened portion; it cannot be otherwise detached; then is there a noncicatrized umbilical wound, and the erysipelas almost always commences at this point. Under ordinary circumstances, this condition of wound is nothing; but at the moment when puerperal fever reigns in the hospital there is a connection between the disease of the mother, who dies of puerperal fever, and the disease of the child who dies of erysipelas.

A woman, seven months gone, occupying one of the beds of our ward, has had, for fifteen days past, incessant vomitings, her stomach being incapable of retaining anything whatever. We will seize this occasion of saying something of the vomitings which supervene in the course of pregnancy. I should remark, however, that in the patient to which I have just made allusion, there has existed a diarrhea for four or five months, and that she offers something which does not resemble the vomitings of which I propose speaking.

It is very common to see women attacked, during pregnancy, with vomitings which nothing is capable of arresting. We saw one instance last summer, and if the cases were collected we believe there would be many similar to it, of a woman who finally died under these circumstances from inanition.

This grave disease has been combatted by very various means and medicines, especially by alcoholics. And there is no doubt that very strong alcoholic drinks suffice, in certain women, to arrest the vomiting. The experiment has been made to ascertain their *modus operandi*, but I am unable to tell you by what mechanism they act. This medication, however, like the others, is often inefficacious; the disease progresses, and the women perish or abort.

Five years ago, a lady, pregnant for the first time, who for six weeks had vomited both liquids and solids, called in M. Bretonneau. He found the patient in a most alarming state; the affection progressed very rapidly, and threatened to become inevitably fatal. An accident put M. Bretonneau upon the right track. This woman when questioned complained of sharp uterine pains. In a primipara, the fibres of the uterus are not broken in, if you will allow the expression, are not habituated to the process, and allow themselves to be distended with difficulty; and it is this which causes the pain. M. Bertonneau thought that the uterine pains were the cause of the other symptoms, and that if he succeeded in mastering them, he would overcome the sympathe-

tic vomitings of the patient. Acting upon this idea, he covered the hypogastrium repeatedly with a mixture of belladonna; the vomitings ceased the same day, and recovery ensued. Sometime afterwards, he had occasion to observe another case where the pains of the uterus did not exist; but he thought that even if the brain did not perceive the pains of the uterus, the ganglia might take note of them and reaction occur. To modify these accidents he believed it sufficient to prescribe the belladonna mixture, and was again gratified with complete success. The result of these and similar cases justifies him, he thinks, in laying down the following principle:

Whenever in a woman, pregnant for the first time or many times, vomitings supervene during the course of gestation, frictions should be made upon the hypogastrium with a mixture of belladonna, and the vomitings will cease.

About a year and a half ago Dr. Ems called me in consultation in the neighborhood of Versailles, and after we had examined a patient laboring under rheumatism, he spoke to me of a woman who gave him great uneasiness, and who appeared to be going to die of hunger. This woman, he said, was in the seventh month of her pregnancy; her stomach was totally unable to bear anything, and she was in what seemed a hopeless state. I told him of the treatment of Bretonneau in such cases; he tried it; the next day the vomiting ceased; the patient was able to take aliment, reached the full term of her pregnancy, and gave birth to a child. It is now six months since Dr. Ems related to me this fact, at which time he cited me another patient in a similar condition, whom he had also treated with success by the same remedy. Dr. Duclos has seen two women attacked with obstinate vomitings, in whose case all medication had failed till he used the belladonna, which, true to its end, cured them.

In what manner does the belladonna act? I confess it is impossible to determine. Can it be supposed that the fœtus in being developed, painfully distends the fibres of the uterus; that the vomitings are sympathetic, like those which super-

vene in cystitis, for example? This is possible. Whether it be this or something else, it is upon this hypothesis that M. Bretonneau has employed his remedy. He has promulgated his theory, and has endeavored to confirm it by facts. The fœtus distends the uterus; the nervous ganglia take cognizance of it, and sympathetic vomitings are the consequence. This is his theory, which you may adopt or not, but which you must all admit conforms with marvellous exactness to the therapeutical results.

The case which occupies us is neither so clear nor so well marked as the others. The patient has had diarrhea for four months, a sensation of a hot iron and scaldings in the stomach, vomitings, but she had none of these in a preceding pregnancy; it is important not to confound the vomitings which supervene in gastro-enteritis with those which are sympathetic with the uterus. That the vomitings in the case before us are sympathetic is possible, but I do not venture to affirm that it is so.

The remedy of such seeming efficacy in the cases described, will possibly fail here. I am going to assume that there is a gastro-intestinal affection—to suppose that there is excess of development of acid in the stomach and the superior portion of the small intestine, and for this employ magnesia. This substance in contact with it saturates the acid, and modifies the organ in such a way that it secretes less, and the burnings of the stomach disappear. If the gastro-enteritis disappears and the vomitings persist, I will suspend the magnesia, concluding that the vomitings are sympathetic, and will proceed to the confirmation of my theory by the method that I have pointed out to you. It is of great importance to discriminate clearly and correctly, as you see, for the medication may appear bad, while it has only been improperly employed.

Rheumatism Cured by Quinine.—A woman, five weeks after delivery, entered the wards of M. Trousseau a short time ago, laboring under an attack of acute articular rheuma-

tism, which had commenced five days before. The heart was not involved, there being no symptoms of either endocarditis or pericarditis, though to a very violent fever there was joined hydrarthrosis of both knees, and swelling of the sheaths of the tendons of the feet.

Without any previous medication having been employed, sulphate of quinine, administered from the second day of the entry of the patient into the hospital, procured, in the space of four days, a marked amelioration in her condition. Incapable of doing so before, she was able to walk on the fifth day, at which time the fever had disappeared, and scarcely any fluctuation could be felt in the articulations.

M. Trousseau remarked: Here, now, is a rheumatism which has been cured in a very few days. But it is by no means the case that things usually pass thus; most often the symptoms persist during three weeks, more or less. When the rheumatism improves you must pursue the same therapeutical course as in intermittent fever; if you immediately stop the administration of the quinine there will be a relapse, and you must never forget that relapses often last longer and are more rebellious than the original attack. This return of the affection is to be prevented by the administration of quinine in the same doses, at intervals of two, three, and four days, and continued after the subsidence of the pains in a preventive manner.

You should act upon the idea that rheumatism is not a local affection, and that an individual is not cured when the pains have completely disappeared. We see the buffy coat persist so long a time, that we are obliged to employ medication against the rheumatism which would still appear, and it is in this point of view that the continuance of the quinine is important in such cases.

So long as the patient has sweats and his appetite does not return, and there is something wrong in the pulse, you must treat the diathesis. When we employ venesection, we do not treat the rheumatism; we occupy ourselves with the diathesis, in virtue of which the liquids and the solids take on

rheumatism. When we make use of quinine we attack the whole economy—and that particular condition of it called diathesis, out of which the pains and other phenomena in the articulations arise. The diathesis may persist two or three years after all manifestations have ceased, and we are obliged to act against it in the same manner that we act against the syphilitic, scrofulous, and other diatheses when the other manifestations have disappeared.

The same rule is applicable to the miasmatic febrile diathesis; that is to say, to that diathesis in virtue of which an individual possesses within himself the conditions necessary for the production of intermittent fever. A man inhabits a marshy country and quits it without ever having had intermittent fever—he settles in a district where the fever has never existed, and three or four months after he does so he is attacked with intermittent fever. Why is this? Because he preserves the the febrile diathesis. At the end of a certain time this individual is relieved of his paroxysms by the sulphate of quinine, but is he cured of the diathesis? No. If you suddenly cease the quinine even when the paroxysms have not been seen for eight days, the fever returns; from whence you see that the disposition by virtue of which the individual had intermittent fever, the diathesis, still exists. It may be most correctly compared to the rheumatismal diathesis, and if it be the rule in the one case to insist on the employment of quinine during three months or more, you must comprehend that the same is required in the other, whether it be a little more acute or a little more chronic.

Chloroform.—After my long letters on Ether, I deem it useless to say much of Chloroform, as an agent to allay pain in surgical operations. Suffice it then, to say, that chloroform has completely supplanted ether in the Paris hospitals; that the surgeons are unanimous in according to it a decided superiority over this substance—a superiority consisting, briefly, 1. in its more agreeable taste and odor; 2. in its being less irritating than the ether to the air passages; 3. in its desired

effects being more speedily obtained, more complete, continuing for a greater length of time, and passing away when they once begin to do so more readily than those of ether; 4. and lastly, its more simple mode of administration, no apparatus appearing to succeed so well as the simple concave piece of sponge.

Eschars of the Sacrum.—From the time that M. Blandin was a student of medicine, he says he was struck with the sudden manner in which eschars of the sacrum often produce death, and the important fact was referred to in his Surgical Anatomy twenty-two years ago. In a late clinical lecture he remarked, that he believed he had found an explanation of the fact in the following circumstances:—the point which suffers most from pressure in the dorsal decubitus is that which corresponds to the union of the sacrum and coccyx, which is precisely the point where the vertebral canal is formed only by the posterior sacrococcygeal ligament. This disposition of things allows the sphacelus to reach with great ease the *cul-de-sac* of the arachnoid; from whence the cavity of this membrane is opened, and the air, pus, and sanious matter penetrate. From this there results a violent inflammation which produces the phenomena of paralysis in the rectum, bladder and inferior extremities.

While showing the gravity of eschars of the sacrum, M. Blandin urges the precautions by which they are to be avoided, consisting in unwearied care, cushions, etc. etc.

Comparative advantages in Children of Lithotomy and Lithotrity.—The opinion of M. Guersant, Jr., of the Hôpital des Enfans, concerning the comparative advantages of Lithotomy and Lithotrity in children, is summed up in one of his clinical lectures. After having successfully lithotritized a boy of seven years old, he remarked: The question here presents itself, whether one should prefer in children lithotomy or lithotrity? Some time ago I presented to the Academy of Medicine a comparative table of which the following is the sub-

stance: of 51 calculous children that I have seen here, I have lithotomised 37. Of this number 30 recovered and 7 died; but four of these died in consequence of an intercurrent disease. I have lithotritised 8; 5 of these have recovered and 3 died; but only one died on account of the operation. In the remaining six the calculi were seated in the canal of the urethra, and I had no difficulty in removing them.

You will remark that so far as my experience goes, the results have been equally fortunate in the two operations; nevertheless I must express my preference for lithotomy when the calculi are voluminous, and lithotrity when they are small. I know that lithotrity offers certain inconveniences; thus, for example, it sometimes happens that there remain after the operation fragments of considerable size, and that, the neck of the bladder being easily dilated and the emission of urine being performed with force by children, the fragments may become engaged in the canal, in such a manner as to be incapable of either advancing or retreating, and thus render a new operation necessary. But this, we think, does not happen sufficiently often to justify our relinquishing the aid to be derived from lithotrity.

Prussian Blue in the Treatment of Neuralgias.—Prussian blue, a double salt which has received the names of ferrocyanate, double cyanate of hydrate of iron, etc., has never been very greatly employed by physicians. It is, says M. Bouchardat, a very important product for dying, but inert in medicine. This author adds, that it was once extolled in the treatment of intermittent fevers, in doses of from one to ten grains; as also in chronic diarrhea, in doses of one or two scruples; and in epilepsy, in doses of from six to ten grains. The sway of this salt soon passed away, and has never since revived, owing partly, perhaps, to its having been over-praised. M. Rayer has, however, been experimenting with it lately, and, it appears, with a success which has induced him to continue and extend his trials. This celebrated physician does not employ it in the large doses I have mentioned, but confines himself to the administration

of it, in the form of powder, in doses of from one grain to one and one-fifth of a grain, which he continues for one or two months. The affections in which he has exhibited it belong to the order of neuralgias—principally those of the face—and cephalalgias.

Although this medicament has not been used to a sufficient extent to warrant us in pronouncing with any confidence upon its complete efficacy, in diseases so rebellious as the neuralgias, its use appears to have been followed by some decidedly beneficial, without any unpleasant, results.

Acupuncture in the Treatment of Blemishes of the Cornea. A Spanish Medical Journal, the *El Regenerador*, mentions that a Dr. Perez has used acupuncture in the treatment of a number of cases of spots of the cornea, with great success. The following is the manner in which he proceeds: The patient being placed as for the operation of cataract, the surgeon fixes the eye, either by an instrument or by means of the finger of an assistant. He then takes the needle, and holding it like a writing pen—(sometimes he plunges the extremity in a solution of 12 drops of prussic acid to 3 scruples of distilled water) he introduces it at a very acute angle, of 2° to 4°, at each of the extremities of the diameters of the cornea, at half a line from the union of this membrane with the sclerotica. He carries it sometimes to the second order of lamella which constitute it; sometimes to the membrane of the aqueous humor, and sometimes to the crystalline body. The needle is always allowed to remain in its place during a space of time varying from two to five minutes.

After having withdrawn it, it remains to combat the accidents of reaction according to the degree of their intensity.

Paris, Jan. 27, 1848.

REVIEWS.

Art. IV.—*Etherization; with Surgical Remarks.* By John C. Warren, M.D., Emeritus Professor of Anatomy and Surgery in the University at Cambridge; Surgeon at Massachusetts General Hospital; Honorary Member of the Medical and Chirurgical Society of London; Corresponding Member of the Royal Academy of Medicine at Paris, and of the Academies of Naples, Florence, etc., etc. Boston: William D. Ticknor & Co. 12mo. pp. 100. 1848.

The author of this little work has long held a high rank among the first American surgeons, and his opinions are therefore certain to receive due consideration. It was at Boston that etherial inhalation, with a view to the annulling of pain in surgical operations, had its origin, and it is fit that Boston's most distinguished surgeon should give us the results of his experience with the new agent. We are glad of an opportunity of presenting to our readers the experience of so competent an observer, and proceed without further preface to notice the principal points of his exceedingly interesting tract. From the following passage it will be seen with what enthusiasm the veteran surgeon hails this wonderful discovery. He exclaims—

"A new era has opened to the operating surgeon! His visitations on the most delicate parts are performed, not only without the agonizing screams he has been accustomed to hear, but sometimes with a state of perfect insensibility, and occasionally even with the expression of pleasure on the part of the patient. Who could have imagined that drawing the knife over the delicate skin of the face might

produce a sensation of unmixed delight! that the turning and twisting of instruments in the most sensitive bladder might be accompanied by a beautiful dream! that the contorting of anchylosed joints should co-exist with a celestial vision! If Ambrose Paré, and Louis, and Dessault, and Cheselden, and Hunter, and Cooper, could see what our eyes daily witness, how would they long to come among us, and perform their exploits once more! And with what fresh vigor does the living surgeon, who is ready to resign the scalpel, grasp it, and wish again to go through his career under the new auspices!"

The author, in the first few pages, gives a brief history of the progress of etherization, and, after remarking how slow this progress has been in this country compared with its rapid extension on the other side of the Atlantic, concludes this branch of his subject by stating, that he has assisted in operations where ether was employed in about two hundred cases, and has directed its use in a number of patients under his care where he was not present. The result of all this experience is stated in the following paragraph:

"We think it then fair to say, that the number of deaths from surgical operations after etherization, has not been greater than it would have been without. May it not be said even, that this number has been lessened by the exclusion of the shock from pain, which would have occurred, had it not been administered?"

It is a question, comparatively, of but little importance, how the ether makes its impression upon the system, whether through the medium of the nerves, or that of the blood-vessels. Dr. Warren believes that it is through the latter, and few, we presume, after a careful examination of the phenomena attending etherization, will come to any other conclusion. The fact, that the etherial odor is perceived in the blood a few minutes after the vapor is inhaled, must be held conclusive as to its imbibition.

It has been objected to etherization that asphyxia is sometimes induced by it, and that the blood is blackened, dissolv-

ed, and rendered slow to coagulate, in consequence of which hemorrhages are prone to occur. To this Dr. Warren replies—

"Such instances as these occurred, however, only in the early history of etherization, when the valved tube was employed to limit the entrance of atmospheric air, and produce a more exclusive inhalation of ether. As soon as the valve was removed, and especially after the introduction of the sponge, asphyxia ceased to occur, so that, in upwards of a hundred consecutive cases, there has not been more than a single instance, and this of short duration. There are no longer to be seen those violent struggles for breath, purple hue of the blood, or difficulty in the suppression of hemor rhage"

Dr. Warren is incredulous respecting the fatal action of ether in any of the cases in which death has been ascribed to it, at the same time that he acknowledges the potency of the agent, and would have it used with caution and judgment. He says—

"No instance of death in man from inhaling ether has occurred in our knowledge, or belief. For although there have been a number of cases reported as fatal, yet in these the connection between the cause and its supposed effect appears to be too imperfect to bear a close examination. Only one occurrence of this nature has happened here. A boy of very bad habits, whose arm was torn off by machinery, had an amputation at the shoulder-joint skilfully performed by Dr. Lewis on the day after the accident under etherization, and died in eight hours."

Respecting this issue Dr. Warren pertinently asks—

"Is there anything remarkable in the death of a boy, in the habit of using spirituous liquors freely, from a laceration of the arm near the shoulder, requiring an amputation at the joint?"

Dr. Warren does not believe, from all that he has seen, that etherization is at all likely to give rise to pulmonary affections, but, on the contrary, regards it as a good remedy in

spasmodic asthma, and chronic bronchitis, in which it is a powerful expectorant.

It has been further objected to ether, that it may be employed in a criminal way; and the fact cannot be denied. That it has been thus abused evidence will be found on another page of this number; but that the abuse is not without its proper perils, the evil-disposed will be taught by the experience of the French dentist.

Some of the diseases in which Dr. Warren has witnessed the happy effects of ether, are colic, dysmenorrhea, and neuralgia; and aside from its agency in abolishing pain in all operations, he has found it eminently serviceable in strictures and dislocations, where spasmodic muscular contraction constitutes the chief embarrassment to the surgeon. He cites cases of stricture of the urethra, and of the œsophagus, in which he employed the remedy with the best effect.

But it is not in these circumstances alone that etherism promises to avail our race. There comes a time when all that the art of the physician can do, is to "smooth the stormy passage to the grave." As a euthanasial agent Dr. Warren thus speaks of it:

"Since the establishment of ethereal practice in surgical operations, its former utility in mitigating the agonies of death has led me to employ its influence in a more free and decided manner. And so far as the trials have extended, they serve to justify its use in a great number, and I hope I may say without enthusiasm, in the majority of instances. Should this prove, on a full trial, to be the fact, the value of the discovery will be greatly enhanced, since the number of those who are called on to suffer in the struggle between life and death, is greater than that of those who are compelled to submit to the pain of surgical operations.

"I am fully aware, that the agony in the dissolution of the bond between the bodily frame and its spiritual tenant is not so great as it is believed to be; for, having questioned a great number of persons passing through the last stage of earthly existence, whether they suffered pain, the answer has been almost uniformly in the negative; and on inquiring what sensation was experienced, the reply has been such as to lead

me to consider it an undefinable sense of discomfort. The intellectual faculties appear to be so clouded and confused, that they are unable to take cognizance of the agitation which convulses the physical organization.

"There are, however, exceptional cases, in which there is great bodily suffering; and there is in all men an instinctive dread of the pains of death. If we find the means of preventing or relieving these pains, the great change may be viewed without horror, and even with tranquillity. He who would experience a real euthanasia should not, however, trust merely to the virtues of ether, but should also have settled his accounts with this world, and be well prepared to settle those of the future."

The following are the general conclusions at which Dr. Warren arrives on this interesting subject:

"1st. Inhalation of ether produces insensibility to pain.

"2d. Ethereal insensibility, judiciously effected, is not followed by any dangerous consequences.

"3d. Its administration is easy, and usually requires but a few minutes.

"4th. Individuals of all ages may be safely etherized.

"5th. Individuals of the same age are susceptible of the influence of ether in variable degrees.

"6th. Surgical operations may be done under the effect of ether, which could not be done without.

"7th Operations very short, and not very painful, especially those about the head and neck, are best done without ether.

"8th. The shock of the nervous system is greatly diminished by etherization.

"9th. The use of ether has increased the number of successful operations, by encouraging a resort to them at an earlier period of disease.

"10th. The use of the sponge is more safe and easy than that of any special apparatus.

"11th. A special apparatus is convenient for some peculiar cases.

"12th. The existence of chronic pulmonary disease rarely forms an objection to etherization.

"13th. Etherization may often be employed advantageously as a substitute for narcotics.

"14th. The employment of ether does not retard the healing of wounds, nor give them an unfavorable character.

"15th. The pains of death may often be relieved by etherization."

Nearly the whole of this volume was written before Chloroform was announced, and Dr. Warren devotes only a few pages to this subject; but the reader will not need to be told, that all that has been said of the virtues of ether is applicable to the substitute. Nay, there remains no longer a doubt, brief as has been the experience with chloroform, that this agent possesses many and decided advantages over ether, and is destined speedily to supersede it. From many trials with it in this city under our own observation, and among our professional friends, we are satisfied that its action is safe, agreeable, and unattended with danger. We doubt not since it was introduced here a few weeks ago, that a thousand persons have inhaled it in this city, and yet not a single accident has come to our knowledge, although many of the experimenters with it have been lads and boys in the streets. This is an abuse of the article, and it is to be hoped that the reprehensible practice will be suppressed, but thus far it has had the good effect pretty effectually to remove from the public mind all fear of the chloroform. Professor Simpson has lately published a case in the London Lancet strongly illustrative of the safety with which this vapor may be respired for even a long time. He kept a parturient female under its influence for *thirteen hours* consecutively, the labor being rendered tedious by the narrowness of the pelvic canal, and the child being at last delivered by the forceps. "If any permanently injurious influence were to be dreaded from the exhibition of chloroform," remarks a writer in the Medico-Chirurgical Review, "surely it would be manifested in such a case as this;" and yet, he adds, "we are assured by Professor Simpson that the child when born showed no other want of vital power than was fully accounted for by the long-continued pressure to which it had been subjected; and that the mother's recovery was

remarkably rapid, the child also speedily becoming perfectly well."

Not a few physicians, distinguished for their talents and judgment, have kept aloof from the letheon excitement, and even regarded with distrust the warm enconiums bestowed upon it by their more enthusiastic brethren. Such, we think, must at length dismiss their prejudices, and if they could not adopt ether, at least give chloroform a trial. It is often a virtue to receive with allowance the testimony of discoverers in favor of new remedies, but to set one's face obstinately against the use of agents recommended as ether and chloroform are, is certainly *not* a virtue.

We do not hear of the use of these agents by many obstetrical practitioners in this country south of Boston, decided as is the evidence in their behalf by those who have made trial of them. In Scotland, we are told, the practice has been condemned by some on the ground that it contravenes the curse brought upon our first mother by her transgression in the garden. We wonder if it be possible that such an argument can have weight with any professional man? The objection strikes us as, in the last degree, absurd. To carry out the principle, we should set our faces against all the improvements introduced by science in the practice of midwifery, by which the pangs and perils of childbirth are diminished, and not only so, but must stoutly reject all the labor-saving expedients of our inventive age, for mitigating the toil of man, and thus lightening Adam's share of the burden.

We have not attempted to present a full analysis of the volume of Dr. Warren, purposing merely to give the results of his experience in etherization; and leave the reader to derive from the work itself the many valuable suggestions which it contains on various surgical subjects.

ART. V.—*An Attempt to discover some of the Laws which govern Animal Torpidity and Hibernation.* By PETER A. BROWNE, LL. D., Member of the National Institute for the Promotion of Science, of the American Association for the Promotion of Science, of the Academy of Natural Science of Philadelphia, of the Academy of Natural Science of Chester County, and Professor of Geology in La Fayette College. Read before the Association of American Geologists and Naturalists, at the eighth Annual Meeting, in Boston, in September, 1847.

The works of the Supreme Architect, being stamped with the seal of his infinite perfections, cannot be exhausted by human industry —*Spallanzani.*

We are very liable to error by drawing hasty conclusions from a few isolated facts, *as they occur in the higher grade of animals,* without availing ourselves of the phenomena of *more extensive animal existence.—Harlan.*

Philadelphia: Barrett & Jones, 34, Carter's Alley. 1847. pp. 32.

The author of this interesting tract defines Torpidity to be "A natural, temporary, intermediate state, between life and death; into which some animals sink, owing to an excess of heat, or of cold, or of drought, or want of oxygen, or for the purpose of enabling them to effect some natural change in their form, such as developing some organ, or of making some addition to their structure;—during which state, (when it is profound), their respiration and digestion are entirely suspended, their circulation reduced to an oscillation of the heart and its immediate vessels, (without, however, destroying the liquidity of their blood), all sensibility and power of voluntary motion are destroyed, and the irritability of their nervous system is greatly diminished."

Of the family of vertebrated animals two classes are hibernating—the mammalia and reptiles. Among the first, are the bat, the hedgehog, bears, raccoons, the marmot, the prairie-dog, the wood-chuck, the water-rat, the field-mouse, porcupines, and some others, belonging to the class of mammals;—and of the cold-blooded vertebrata, all the classes contain hibernators. Of molluscous animals only one order is said to hibernate; namely, the gasteropoda; of the five families of articulated animals, three are hibernating; and

of the radiated family, only the rotifers are known to hibernate.

What is the condition of the respiratory function in torpid animals? This is the first point to which our author addresses his inquiries, and he adduces much authority to show that where the torpidity is complete, there is no respiration. Mr. Saissy found that while the hibernating animals examined by him consumed, in the ordinary way, a quantity of oxygen considerable enough for their size, they consumed none at all when entirely torpid. Respiration does not appear to cease all at once, but gradually, in proportion to the degree of torpidity, from the most partial to the most profound; and, according to Saissy, as well as other physiologists, a debasement of temperature corresponds exactly with the diminished consumption of oxygen. The conclusions of our author are thus stated:

"1st. That (as before stated) these animals, when they are enjoying their usual activity, consume a quantity of oxygen considerable enough for their volume.

"2d. That this consumption diminishes in proportion to the diminution of their temperature.

"3d. That they possess at all times the faculty of existing a considerable time in the air that is fit for neither combustion nor respiration, without being much fatigued.

"4th. That during their torpidity, but while respiration is still visible, the consumption of oxygen is very small compared with that of their ordinary state, and

"5th. That during *profound torpidity* there is no consumption of oxygen at all and consequently no *respiration*."

Dr. Browne adds to the facts derived from other writers on the subject, a curious observation made by Dr. Dickerson relative to the alligator. This animal, according to Dr. D., "hibernates with a pine or cypress knot in his mouth, completely closing the passage of the stomach." The account is, that from the middle of September to the first of October the creature becomes careless of his food; about the latter end of October he selects a pine or cypress knot, with

which he stops his mouth, the end extending into his throat. He then crawls into a hole under water, where he remains torpid till the dog-wood blooms in the spring, when he reappears and ejects this piece of wood, which by that time is rounded and smoothed.

The condition of the circulation in torpid animals is the point next examined. All writers on torpidity agree that the blood circulates with less activity in proportion to the depth of the lethargy. A hamster in its natural state has one hundred and fifty pulsations in a minute, and only fifteen when the animal becomes torpid. Toads and frogs with thirty pulsations in the normal condition, have only twelve in their hibernaculum. Saissy even avers that in the hibernating condition the circulation is entirely suspended. Flourens is of the same opinion; and from experiments made by our author on animals of the various classes, he comes to the conclusion arrived at by these eminent naturalists.

The next subject is the digestion of torpid animals. This function, as might be inferred, is entirely null during hibernation.

"Dr. Monroe kept a hedgehog in a room at Edinburgh, without a fire, from November until March. About December, it was affected with an unusual degree of drowsiness, but it continued to eat, sparingly, until the 25th day of that month, when it sank into a state of profound lethargy. It so remained until the 8th of March following, except when occasionally roused, but it would soon return to the torpid state again. During all this time it ate nothing, drank nothing, although food was constantly kept before it.

"So M. White, of Sethbourne, kept a land tortoise forty years. During the summer months it was very voracious, but it gradually became less so towards autumn, and by the middle of November it sank into a torpid state.

"There is no food of which the alligator is so fond as a dog, yet when the time of their hibernation is approaching, they evince an entire indifference to it.—*Dr. Dickerson.*

"M. Saissy also informs us, that the marmot will refuse to eat, and become torpid, even while surrounded by apples, pears, and nuts; and the hedgehog with flesh near him.

"Nature appears to have kindly deprived these animals of the desire for food, foreseeing that they were about to lose the power to digest it.

"Hunter introduced food in the stomachs of lizards about to hibernate, and upon opening them, at different periods of the state, always found the aliment *unaltered.* With some, after the season of hibernation had passed, the food was ejected *unchanged*, (indigested)."

No proof is necessary to establish the fact, that torpid animals are insensible to every external stimulus; but there is one function, the suspension of which has not been fully demonstrated—that of reproduction. Thus Cuvier speaking of the bear, says, that it is in a state of hibernation, more or less profound, "that the female has her young;" and Audibon and Buckman relate the same of the wood-chuck. The torpor of these animals, we conclude, is not very "profound" while this process is going forward.

The anatomical structure and physiology of torpid animals is investigated, but without any very satisfactory results. By some, the thymus gland is believed to bear a decided relation to the torpidity of animals, but the testimony on this point is contradictory. The fat is generally believed to increase before hibernation, and to diminish during the continuance of this state; but here also the experience of observers wants uniformity. Spallanzani found some dormice, caught for his experiments, lean, and others fat; and, on the other hand, Cornish found, by actual experiments, that dormice and bats, by a hibernation of two weeks, lost from five to seven grains of weight. Saissy examined the fat of certain hibernating animals, and found that it was soft and unctuous, like that of a hog; and that it was inodorous, and had an insipid taste. The only effect of torpidity upon it, according to him, was to render it a little more consistent. Our author, notwithstanding, is of the belief, that the fat of hibernating animals "*has* to do with their torpidity." If respiration is suspended in hibernation, we do not see why there should be any consumption of fat, or any loss of weight in

the animal; but until that function ceases entirely, the oxygen imbibed will reappear in the shape of carbonic acid formed at the expence of the organism. As the temperature declines in proportion as the breathing becomes feeble, and rises as this process is restored to activity, so the consumption of fat will vary with the state of the respiratory function.

The topic next examined is the causes of torpidity. They are, according to Dr. Browne, immediate and mediate. The immediate causes are cold, heat, drought, want of oxygen, and a natural necessity to repose, while some change takes place in the organization. This last is called metamorphosis.

Cold produces in the human species an insuperable disposition to sleep, as has been exhibited on many memorable occasions. Cold is connected with the torpidity of most hibernating animals, but not with that of all, for some hibernate in hot weather, and some in drought; in some torpidity results from a want of oxygen, and in some attends upon the metamorphosis of the animal.

It is known to all visitors of the Mammoth Cave, that vast numbers of bats congregate in one of the recesses of this cavern to pass through their hibernation. When we were there near the close of September, in the year 1846, the temperature of the outer air was 85°, and yet we found a number of bats in the cave already torpid. The interior of this cave has a perennial temperature of about 56°. What was it that took these animals into their winter quarters while the temperature of the air was still that of high summer? What is it that brings them out in the spring again? What influence reaches them in their deep retreat, to call into activity their slumbering functions? We confess we have no answer.

The *mediate causes* of animal torpidity have been conjectured, without being satisfactorily made out; and hibernation continues to be no less a mystery now than it was when man first speculated on its nature. This tract embraces many curious facts connected with the phenomenon, but affords no adequate solution of the cause.

SELECTIONS

FROM

AMERICAN AND FOREIGN JOURNALS.

On the advance of the Asiatic Cholera; with suggestions for it Treatment. By CHARLES W. BELL, Esq., Manchester.—The near approach of the cholera, together with your challenge to the profession, to determine upon the principle which is to guide the treatment of that disease, induce me to venture on expressing the views which peculiar circumstances, and much experience of its management, have led me to form; and to state the practice which, all throughout the progreas of the cholera that appeared in Persia in 1842 and 1843, proved successful in some thousand cases.

It is true that the type of disease in that epidemic was mild in the generality of cases, but it was the commencement of the identical cholera that is now approaching us; and, if changed now, is changed probably only in degree, not essentially in its nature; and as treated by the native practitioners was almost always fatal.

It reappeared irregularly in Persia in 1844–45, and again, with greater virulence, in 1846; while in the present year, forsaking the Eastern provinces of that country which it had scourged, it passed on, as in 1831, to the Russian provinces of Georgia and Circassia, and into the Turkish province of Armenia.

In Southern Asia, after confining its attacks for two years to the Southeastern provinces of Arabia Mesopotamia, it has now advanced and crossed the Red Sea into Egypt on the one hand, and on the other overspreading Asia-Minor up to the coast of the Levant; now threatening Greece, and it is said has already appeared in Constantinople. Meanwhile passing to the north of the Caucasian range, it has arrived at Riga,

and also penetrating Circassia from Teflis, it has crossed the mountains, and arrived at Varouish, the most central town of Southern Russia.

Again passing through Turkish Armenia, it reached Trebisonde, and thence crossing the Black Sea, arrived at Varna, the mouths of the Danube and Odessa; and already single cases are reported at Vienna.

Thus instead of the limited course which it pursued in 1831–32, confined to Russia, Prussia and Denmark, till it finally reached England, and only returning in 1843–44, and 45 upon Austria, Saxony, Southern Germany, France and Italy, and attacking them in the irregular manner in which it is wont to revert to places that it had left intact in its first progress,—it is now advancing upon the whole of Europe at once by five different routes, and appeared in as many points in the extended line between Greece and Riga.

We have, therefore, reason to fear that its future progress may be marked by a virulence proportioned to its extended front and uniform progress. Under such circumstances, I hold it to be an imperative duty in any one who has had an opportunity of studying the disease, to add what he can to the imperfect knowledge that we possess on the subject: and I venture to hope that these considerations will excuse me for throwing aside much of the diffidence that I should otherwise have felt in publishing my own views and until they should be further confirmed.

It was my good fortune first to study the disease under my cousin, Mr. G. H. Bell, in Edinburgh.—author of what appears to me to be incomparably the best work on the subject that I have met with. I afterwards saw the disease in London, when it was the fashion to treat it on Dr. Stevens' system of endeavoring to supply the exuded serum of the blood by the administration of salt and soda. After this, all the experience I had of it was a chance case in Bombay, till 1842, when a series of epidemics of peculiar character commenced in Persia, where I was attached to the embassy, and was in medical charge of the Persian army.

The first of these was dysentery; then a peculiar periodical disease, till then undescribed, attended with intense disturbance of the circulation and nervous system: which also appears to have been observed at Strasburg. Then came tropical remittent, then congestive ague: and this finally terminated in true cholera.

To this series of disease I am indebted for being led—as I

cannot but think I have been—by a species of natural analyses, and by easy transitions, to a clearer insight into the nature of the disease; and to a practice, unbiassed by theory, and simply arising out of the process of accommodating my remedies to the changing type of disease: which then proved successful in every case I attended, where the feet had not already become warm, while the legs and body remained cold.

This is a symptom which my whole experience teaches me to consider as a sign of actual death. In this most authors of experience bear me out, and I have invariably found that every interference with the patient who presented this fatal symptom only increased the spasms and suffering, and hastened the consummation.

Almost every intelligent author on this subject has classed cholera with the cold fit of ague—as, indeed, the whole of its features render nearly inevitable; and viewing it in this light, the rationale and use of bleeding, as recommended by Mr. Bell and other authors, could not be better laid down than it is in his work on Cholera Asphyxia. Yet among these authors I have searched in vain for a single statement that cholera is—what I am satisfied it will invariably be found to be—a congestive ague of quotidian type. All whose works I have read consider it as, *in its whole course*, merely the cold fit of an ague, and that the fever which occasionally succeeds to it on recovery is the hot stage.

In my belief, no single paroxysm of ague of any kind ever occupied more than twenty-four hours in passing through all its stages, and, according to my experience, (whenever its progress is sufficiently slow to run that course) invariably completes an entire paroxysm within that period, consisting of the congestive or cold stage, and the remission. The stage of reaction which follows congestion can scarcely be said to exist in cholera, and the sweating stage, or stage of relaxation, is only occasionally perceptible, being so little marked as to be nearly undistinguishable from the short period of remission or intermission, but in every case of the epidemic which I had most opportunity of observing, there was invariably a diurnal remission and quotidian accession; and I am greatly inclined to believe this universal in all forms of cholera, where not prevented by previous death or cure.

This, sir, will doubtless appear to you a very bold assertion, and I am aware that it is one which, without the stethoscope at the bed side of the patient, will be most difficult to verify, seeing that the chillness of the surface is almost as great in

this stage as in that which precedes it: at the same time it is very valuable, and will at once indicate a principle for the guidance of the practitioner, which will induce the utmost confidence in his plan of treatment.

The symptoms of these stages are so little marked as to require the most attentive observation to distinguish them, and until the opportunity shall present itself of actually looking for them, I do not expect to be credited, and all that I can hope for at present, from those most conversant with the disease, and who have not as yet entertained this view, is, that they will at least give it their consideration, and try to recollect whether in the more protracted cases that have fallen under their treatment, they have not observed that the patient, after tossing about for many hours in an agony of suffocation, seems at last exhausted, and after long jactitation and continuing to throw off every covering he at last for a short period remains quiet and submits to the load of the bed-clothes. This temporary repose is in most cases almost the only symptom, except a more tranquil action of the heart, that marks the intermission, and forms the most obvious and almost the only guide to the essential part of the treatment of a severe case. In a very short time this period of comparative tranquility ceases—the patient begins again to yawn, to throw up his arms like one bleeding to death, and in a few minutes more to toss about again, and show every symptom of suffocating agony.

These symptoms of the return of the congestive stage have, in the mass of my cases, appeared exactly twenty-four hours after the first accession, insomuch that I invariably made a point of seeing my patient some time before the hour of the commencement of the first attack, and selected it as the moment for the successful use of the lancet, where that fearful but powerful remedy was necessary. But does it indeed require all the sudden and perfect restoration to health which attends its use, to compensate for the first anxious moments of suspense until the blood begins to trickle, or to reconcile the practitioner to such a measure? for when the first few drops ooze from the wound, they seem the harbinger of immediate dissolution; but when its flow is once established, and the patient is at once restored to health, no triumph of art and just principle can exceed it. Latterly, however, I was not in the habit of waiting so long; when the repose of the patient had been well marked for a short time, I bled, with much less difficulty in obtaining blood—with much less struggle and danger to the

patient, and with equal success—forestalling, instead of combatting, the anticipated period of fatal congestion.

In the remittent, and afterwards in the intermittent fevers which preceded the appearance of cholera in 1842,-I found quinine alone, so far from relieving the symptoms, invariably aggravate all of them. I was led by circumstances to administer it in combination with iron, with complete success; and when by almost insensible transitions the epidemic merged into cholera, I continued the same practice. I had the pleasure to find that the first doses of a combination of sulphate of quinine, sulphate of iron, a few drops of sulphuric acid, and often a little sulphate of magnesia dissolved in water, immediately checked the vomiting and diarrhœa; and this I have found equally successful in the only case of true cholera I have met with in England. It occurred in the autumn of last year. The woman, who had previously suffered from the epidemic of 1833, was attacked on her way from Crewe to Manchester, and had been laboring under the cholera for eight hours. I found her cold, blue, purging and vomiting the rice-water evacuations, and cramped, with cold clean tongue, and feeble pulse. She had taken large doses of morphia, which were immediately rejected; but the first dose of the above medicine checked the vomiting, and she was well in a few hours.

In all the mild cases in Persia this remedy was of itself sufficient to cure: it was repeated very frequently in general, but some of the most rapid cures I afterwards learned had been effected by swallowing at once the whole of what I had intended for nine doses. Its good effects were generally immediately indicated by diminished anxiety, returning warmth, proceeding from the chest to the extremities, recommencing secretion of urine; but in cases of severer character it was found necessary to relieve the congestion by the abstraction of blood from a vein; and in doing this all depends upon the period at which bleeding is resorted to. If early in the congestive stage, or just previous to its second accession, it is invariably successful; if just as the congestive stage is passing off, when the pulse begins to acquire a little power, it is invariably fatal.

Before proceeding further, or considering the appropriateness or the contrary of the remedies most lauded in cholera, viz: opium, stimulants, antimonials, artificial heat, or cold affusion,—it will be necessary to consider what takes place in an attack of cholera, that, from its etiology, a theory of treatment may be deduced to point the indications and to defend

the treatment which I have ventured to advise; for though arrived at rather by practice than by theory, it is impossible that it can command attention unless borne out by reason.

1st. With many able authors, I hold cholera to be merely a form of ague; and, in addition, I maintain its type to be quotidian.

To determine the nature of ague, therefore, if this position be true, is to determine both the nature and treatment of cholera. To do this it is necessary to have a clear conception of what is really essential in an ague.

In the first place, I may venture to premise that I have enjoyed very ample opportunity of seeing ague in every variety of type and degree of severity; yet I have never seen a single attack of any kind of ague in which the whole cycle of its stages—that is, in which each individual paroxysm—was not completed within twenty-four hours. I have often witnessed several paroxisms completed within that time, but never one incomplete; and I have never met with a description of an ague in which the paroxysm exceeded twenty-four hours duration, except where the author would appear to have considered Asiatic cholera to be such an ague.

2dly. The congestive or cold stage is the only essential one which is never wanting in ague. It may be severe or slight, partial or general,—be with or without shivering;* but in ague, and every disease allied to it, such as masked and misplaced agues, as they are called, periodical headache, and neuralgia and all the remittent fevers I have yet met with, this stage is never wanting, though sometimes obscure. The second or hot stage may or may not occur; reaction may, and often does, take place quietly, and without fever, and unsucceded by a period of relaxation or sweating. This condition frequently occurs in what is called the fortnight ague—a form with which all who served in the late campaigns in Scinde are well acquainted, where the shivering is severe and hysterical, but where the febrile and sweating stages are often entirely wanting; and yet this is the form most remarkable in its periodicity, and in its return, for one or more days, every fortnight, just previous to the lunar changes.

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* I have latterly been in the habit of considering shivering as a favorable symptom—an indication that the power of the heart is sufficient to overcome the congestion. If this be insufficient to produce shivering, the after symptoms are severe; if such as to overpower this symptom, the congestion itself is always dangerous.

In other forms, more especially the quartan, all three stages generally prove exceedingly severe, and in this form the period of relaxation my perhaps pass the twenty-fourth hour from the accession, but I have not seen it do so, and I should be inclined to define ague as a paroxism of congestion of the internal veins, subsiding wtihin twenty-fours hours, and often followed by febrile action and relaxation of the capillaries. It appears to consist in a gradual change in the action of the extreme capillaries, and apparent constriction of them, by which the blood is rapidly driven inward upon the great veins. When this has reached to such a point as to oppress the action of the heart, yawning first, and then shivering, or a sense of suffocation and pain in the præcordia, are the indications of oppressed circulation, and of the commencing effort of the heart to overcome the mass of blood which is stifling it. If by application of tourniquets to the limbs, or by bleeding, part of the blood which is rushing from the extremities to increase this congestion is prevented from reaching the great veins,—the heart, excited to increased action, is enabled by this relief more quickly to overcome the obstruction and restore the balance of the circulation, and the paroxism passes off. If not thus mechanically aided, the heart, after a severe struggle to maintain the circulation during the period of constriction, is at length relieved, by this nervous disturbance or spasm of the capillary circulation passing off of itself, and then the heart and arteries, so long excited by the struggle, maintain for a time their increased action after the obstruction in the capillaries is removed, and produce apparent febrile action. Presently this excitement subsides, the vessels become relaxed, and sweat succeeds. The vessels continue in this state for a longer or a shorter period, according to circumstances, till they at length recover their ordinary tone and action in the intermission. This fever, however, is not fever properly so called, but reaction; and the sweating not critical or essential, but relaxation. The cold stage is alone essential, and is the physiological cause of the subsequent stages.

If this be admitted, it is obvious that our whole attention must be devoted to the study of the phenomena of aguish congestion, in its commencement, its progress, its mechanical effects on the organism, and the natural means by which it subsides or is overcome; and, lastly, in its tendency to periodical return, if we would obtain a clear perception of the nature of cholera. Before, however, we enter into these considerations, and the ratio medendi, it may be permitted to us to diverge for a moment to consider the question of contagion, and in-

quire how far ague and cholera resemble or differ from the whole class of contagious fevers, so as to justify us in chiming in with the popular opinion of its infectious nature, or of entertaining views to the contrary; for where popular feeling is stong on such a subject, abundant evidence is easily found to support their opinion of apparent facts.

Of the exciting cause of cholera we know little or nothing, and not a great deal of ague. The latter is known as a disease of marshy countries, but it is also the most prevalent disease in the driest countries in the world; for example, the whole of central Asia, the deserts of Arabia and of Africa, of some of the most elevated regions of Italy, etc. etc. A hundred years ago ague prevailed throughout Britain and Ireland, but it has now equally ceased in the most improved and well drained parts of Britain, and the most neglected of Ireland; and no one can say that an improved mode of living among the peasantry of that country is the cause of its disappearance; yet no one considered ague infectious. Marsh miasm, then, if a cause, is evidently not the only cause of ague; and among others, one of the most obvious, in the eastern countries at least, is subterranean volcanic action; whether by means of exhalations, or the electrical effects of subterranean chemical action, it would be difficult to say, but I have seen it and remittent too often precedes or arise with earthquakes, to have any doubt on this subject. Whatever its cause, however, most people are inclined to attribute it to a terrestrial origin; but, however we view it, it must be conceded that it was once endemic in England, and is not so now; yet ague will march across countries as steadily and extensively as cholera.

The remittent fever of 1842, in Scinde, ending in ague, proceeded in a direct line through Beloochestan, right across Persia, Georgia, Circassia, and southern Russia, and gradually losing more and more of its intermitting character, appeared in Edinburg as a modified remittent, with a tendency to periodical relapse, and is described in your journal under the title of the Scotch Epidemic. This remittent tendency cotinued in 1844 and 1845 to influence the type of fever in Scotland, Manchester and Liverpool in these years.

In 1843, in the Asiatic part of its course, this remittent and intermittent assumed the shape of cholera. In 1846–47, cholera there became a scourge, while in this country we only slightly perceived the influence in the increased tendency to intermitting neuralgia, and the secretion of oxalates in the urine, etc. If, then, cholera is propagated by contagion, is it possible that its approach alone, and before its advent,

should so markedly be perceptible in the character of the prevalent diseases, or could it continue to influence them after its disappearance, when confessedly no contagion prevails? Yet it has been remarked by some of our most experienced authors that, ever since the first approach of cholera, the fevers in this country have materially changed in their type, and the use of the lancet in fever, formerly so beneficial, has now become obsolete. These considerations tend to show that (ague and cholera being so nearly allied) there is no reason why cholera should not for a cycle become as endemic in this country as ague formely was, and as it has in fact, become in India since its appearance there in 1767.

But let us examine the action of the poison, whatever it may be that produces ague or cholera; in its effects on the system, as compared with those of contagious fevers, including the exanthemata, and other fevers produced by animal poisons, and whether there is any evidence of its elimination from the system by similar febrile action.

I presume I shall not be going too far in considering continued fevers as the reparative process by which nature eliminates the poison by appropriate organs—the skin, the bowels, etc.; and it will not invalidate this position, that death occasionally occurs through the violence with which this action falls on a particular organ; for if the organs fail to eliminate the poison, and thus protect the nervous centres, death takes place through the nervous system.

It is not so in ague and cholera; in the latter the brain is the last to die. There is no evidence of any poison being eliminated by the action, or any special secreting organ being affected. An ague fit will sometimes pass off without fever or sweating, a cholera attack sometimes without even purging, and leave no evidence of a poison lurking in the system. Whatever the cause of the disturbance of the circulation that produces the congestive stage in these diseases, the fact of an immediate cessation, or a complete intermission of its effects, is almost conclusive that it cannot be, as in other fevers, a poison circulating in the blood, exciting a reparative action, but the effect of a cause acting on the powers which circulate the blood, independently of a change in the blood itself, and most dissimilar to anything that we perceive in the ordinary course of contagious fevers.

We can scarcely doubt that the congestion of ague takes place through an influence of the sympathetic nerve on the minute capillaries; but till we are better acquainted with the powers which circulate the blood, with the changes which

that fluid undergoes in passing through them, and with the effects of electricity upon them, we cannot expect to arrive at a knowledge of the exciting cause of these diseases, but we do not, in the nature of the disease, find a single argument for believing that either ague or cholera eliminated from the system any morbid poison to render them communicable from man to man: although in both we find some reason to believe that that powerful agent, electricity, of which we are as yet so ignorant, has much to do with them, and perceive some evidence of a connection with the terrestrial currents as affecting their periodicity, and with the electrical phenomena that accompany the lunar changes, etc. as effecting their relapse.

The direct evidence in favor of non-contagion has always appeared to me infinitely to preponderate over that to the contrary; and know none more conclusive than the fact of its penetrating the triple cordon sanitaire established by the Prussian Government on the Oder in 1831 at exactly the same rate, four German miles a day, that it proceeded at both before and after its encountering what was expected to prove so formidable a barrier to its progress.

While on this point, however, it would be wrong to pass over a remarkable point which many cases published in the periodical medical journals confirm—that where fever is sporadically induced by accumulated filth, especially decaying vegetable matter, such as stable manure, the type of fever that results is the most exaggerated specimen of the type of the fever that prevails at the time; and thus it happens that people from the same neighborhood are so rapidly affected by a prevailing non-contagious malady as to present every appearance of having received it by contagion.—*London Medical Gazette.*

On Etherization in Labor. [Read before the Boston Society for Medical Improvement, Dec. 27th, 1847, by C. G. Putnam, M. D.] The cases which form the subject of remark are nineteen in number. I have included no case in which the patient was not, for a longer or shorter period, decidedly under the influence of ether. I watched them with more than ordinary attention, and, as I have reason to believe that the experience of other gentlemen in this place corresponds with my own, the results will aid us in making an estimate of its merits. I have selected a few cases which exemplify the points of most interest.

The first is that of a lady 23 years of age. First gestation. Health robust. Presentation vertex. Length of labor twenty-four hours. The dilatation of the os uteri was attended with unusual distress and nervous agitation. I proposed the use of ether, and she gave it a single imperfect trial. The result was unsatisfactory. It caused nausea and sensations of faintness and confusion in the head, and she preferred to go on without it. The expulsive pains were violent, and towards the close of the labor I again offered it. She happened to be breathing deeply when the sponge was applied, and three or four inspirations were sufficient to give entire relief. The transition from a state of restlessness and agitation to that of ease and repose, was immediate. She retained the sponge for a few minutes longer, when the child was born and she was laid comfortably in bed—the whole process having been accomplished, not indeed without her knowledge, but without scarcely a sensation of inconvenience.

Case II.—Presentation of nates. A lady, æt. 24, rather below medium size, constitution delicate. First gestation. During the last two months of gestation had anasarca of the lower extremities, accompanied with sensations of great distension of the abdomen. Restless and uncomfortable day and night. She became much reduced in health and spirits. After two or three days of precursory pain, the dilatation of the os uteri commenced. This stage was exceedingly tedious and irksome. After free dilatation, the presenting part remained at the brim of the pelvis, and thirty-six hours elapsed before it had descended into the cavity. The membranes, up to this time, had fortunately remained unbroken.

The pains, which from the first had been slight, short and insufficient, now made scarcely any impression. It was evident that artificial aid was necessary, and as soon as practicable I succeeded in passing a cord round the thigh. To this a soft well-larded handkerchief was attached and drawn up round the groin. Fifteen grains of ergot were given, gentle traction made during every pain, and in about an hour the child was delivered living. Its weight was nine pounds. The uterus contracted at once, and expelled the placenta, but in a few minutes it relaxed and considerable internal hemorrhage ensued. On removing the coagula, contraction again took place, and there was no further relaxation.

Ether was used sparingly in this case, on account of the deficiency of the pains. Whenever applied, its effects were manifested after inhaling for about a minute, and almost invariably soothed irritability and promoted repose. At the close

of the labor it was carried to the extent of partial insensibility.

Notwithstanding the nature of the presentation and the length of the labor, the secretions were abundantly maintained, and there was at no time either heat or dryness. Convalescence was retarded by mammary abscess. The child was healthy.

Case III.—A lady, 22 years of age. Healthy and strong. First gestation. Presentation vertex. Length of labor, eighteen hours. I was called early, and found the os uteri soft and dilated about half an inch. She had been in pain four hours, and having become uneasy she eagerly made trial of ether. In less than two minutes she became quiet, but not unconscious. At each access of pain she asked for the sponge, and retained it till she was easy. Administered in this manner at the beginning of labor, it was continued at short intervals throughout the first stage, and contributed much to the relief of the wearisome pains of dilatation.

At the commencement of the expulsive stage, I observed that the efforts were suspended, and the process so much retarded by the inhalation, that it was often necessary to withhold it, much to the dissatisfaction of the patient. When, however, the head began to press upon the perineum, the sponge was applied without reserve, and she was unconscious for the half hour preceding and following the birth of the child. The contraction of the uterus was immediate and thorough. The placenta removed at once. The convalescence uninterrupted. The child very healthy.

Case IV.—A lady, æt. 23. First gestation. Health good. Head presentation. Length of labor, twelve hours. I was not called until the beginning of the expulsive stage. The pains occurred every four or five minutes. They were strong, but not remarkably severe.

After inhaling for two minutes, she passed into a state of pleasant excitement and exhilaration. She was conscious of pain, but "it was so far off" that she did not regard it. "It was no concern of hers." Conscious of everything that was passing around her, and of questions addressed her, she felt at the same time incapable of responding, though she talked with great volubility of herself and her condition. One would have inferred from the apparent consciousness during the pains and the accustomed straining efforts, that she was suffering as much as usual—but on the contrary the close of each "pain" was announced by an extravagant eulogium upon ether and its inventors.

She continued to inhale in this manner for two hours with-

out obvious diminution of the force or frequency of the parturient efforts. Just at the close the sponge was applied assiduously, and, though at no time unconscious, she did not realize the least severe pain. The contraction of the uterus was thorough and immediate. The placenta removed at once. Convalescence perfect.

Case V.—I have applied the forceps, under full etherization, in three cases. The conditions in all were essentially the same. I will therefore relate only the last, which occurred the present week.

I was called to this case by a medical friend, who informed me that she had been in active labor for thirty-six hours, that the head had descended into the cavity of the pelvis, where it had remained for some hours immovable, though the pains had been constant and strong. Age 30. First gestation.

During the whole labor she had been clamorous for ether, and it had been administered incessantly, though not to the full extent.

During the delivery—a space, perhaps, of half an hour—she was kept almost entirely unconscious. The child weighing nine pounds, was born living. The uterus contracted well, and the placenta was thrown off at once.

The breath of the child smelt very strongly of ether—more so than in any case that I have met with.

In all of these cases the mother and children did well.

Case VI.—*Arm presentation.* "Waters" discharged and arm protruded *four* days. Pains constant.

A professional friend, who asked me to assist him, stated that he had just been called to the case, and found her in the condition above described. He had made an attempt to "turn" but had relinquished it. When I saw her, the pains were strong. The protruded arm livid, but the fœtal pulsations were distinct.

After inhaling for two or three minutes, she became furiously excited, and was restrained with considerable difficulty. Repose being essential to the success of the operation, we persisted in the application of the sponge well filled with ether for about six minutes, when she relapsed into a state of utter unconsciousness. I was then able to pass my hand through the os uteri, and reached the feet with very little effort, and without being in the least degree cramped. There was no liquor amnii in the cavity, and the uterus was closely applied to the unequal surfaces of the fœtus. A foot was brought down to the os uteri, and a tape looped round the ancle. By drawing upon this with the right hand, and at the same time

rotating the femur with the left, the arm began to recede, and the evolution once begun, was readily completed. The child was delivered living; the placenta thrown off, and removed at once. During the whole time of delivery—little more than half an hour—she was motionless and unconscious, and yet the child was scarcely washed when she insisted on sitting up in bed to give directions about its dress.

Etherization was here carried to its full extent, and the effects were in the highest degree important and gratifying.—*Boston Med. and Surg. Journal.*

Permanent Retention of Antimony in the living Organs.—(Presented to the Academy of Sciences on the 22d June, 1846.) Translated from the February No. of the Annales de Chemie et de Physique. By JOHN M. B. HARDEN, M. D., Correspondent Acad. Nat. Sci., Philadelphia.—In studying the passage of Antimony through the system when given in the form of an emetic, M. Laveran and myself have had occasion to note its permanent retention in the different organs, and its gradual elimination after a long time. This observation leading us, as it did, to attribute to the economy the faculty of retaining certain principles foreign to the composition of the organs a longer time than had before been suspected, made it necessary to follow it up and ascertain more particularly the precise length of time to which it could be extended. Legal medicine is greatly interested in this subject—and Pathology no less so. We have every day reports of cases of Poisoning of protracted duration—with equal care should we chronicle the facts which tend to demonstrate that a very minute quantity of any metallic substance, when once introduced into the tissues remains permanently there, and may be transmitted, as we shall see, from the female to its young.

In order to make correct observations upon this subject, the ordinary cases occurring in disease are not sufficient. We have found it necessary, therefore, to administer the emetic to dogs. For this purpose six dogs were kept up and so fed as to support a long confinement. To the daily food of each dog were added a few grains of tartar emetic.

The first trials with the emetic enabled us to determine, first, the comparative value of the methods proposed for detecting the antimony in the tissues; secondly, to establish the fact of its introduction into the different organs of the body; and thirdly, to prove its retention in these organs during

a certain limited period of time, to determine which, however, a new experiment was necessary, in which six other dogs were kept up for many months.

In those dogs which died during the first week of the experiment the antimony was found in the liver, the heart, the muscles, the coats of the intestines, and the lungs. The brain, the bones and the fat, were entirely free from any traces of it. At the end of fifteen, twenty, and twenty-five days, the amount of the metal in each organ was found to be the same, its quantity not being sensibly diminished. We must add, that in these early cases of poisoning from antimony, the proportion absorbed by the liver was comparatively enormous. 600 grammes of different tissues in which anatomy was found, furnished scarcely as many spots as 100 grammes of the liver.

Before entering into a detail of these new experiments, however, which appear to me sufficiently interesting to be given in full, I will describe the method which I have employed for the purpose of detecting the antimony in the tissues. This method consists in the employment of hydrochloric acid and the chlorate of potash. By causing them to act successively upon the organic matters they are almost entirely destroyed. The antimony is precipitated upon a very thin lamina of tin. The two metals are then dissolved, and we introduce the solution into Marsh's apparatus.

But to be more particular. We weigh 50 to 100 grammes of the tissue to be examined, for example, the liver, the intestines or muscular flesh: it is cut in pieces, while fresh, and introduced into a glass vessel containing one litre, and upon this we pour pure fuming hydrochloric acid to an amount equal in weight to one half of the organic matter. The mixture is then placed upon a sand-bath, not hot enough, however to cause the acid to boil. After digesting in this way five or six hours, it is then made to boil, and immediately we add to the mixture small bits of the chlorate of potash. Fifteen or sixteen grammes of the chlorate is added to every 100 grammes of the organic matters. This addition should be made while agitating the mixture and should consume about fifteen minutes.

As soon as the chlorate has been introduced, the fluid should be filtered while boiling hot. Upon the filter will be found a yellowish or brown matter, resenoid, insoluble, but varying according to the nature of the tissues. The filter with the insoluble matter is now to be washed in a little distilled water, and into the filtered fluid, which is limpid and often colorless,

we place a thin lamina of tin. If the antimony is abundant, the tin will be strongly blackened; if not, it will be barely tarnished, and will be covered over by some black spots. However, it may be, after keeping it in the fluid for twenty-four hours, we remove the tin and introduce it into a small flask, and pour upon it a quantity of hydrochloric acid sufficient to dissolve it in the cold after a few hours. Should a few blackened portions remain undissolved, we decant, and by the aid of a few drops of nitric acid the solution is effected, and we mix them afterwards with the dissolved mass.

The quantity of tin dissolved should not be too large, but we may reduce as much of it as we wish by successive precipitations upon lamina of tin having a very small surface.

I pass now to a consideration of the experiments upon the six dogs which were kept up for many months after the use of the antimony.

On the 8th day of January, these animals were put upon a regimen consisting of bread and pieces of meat. Their rations were mixed every day with a solution of tartar emetic. Each dog ought to have received, according to the common ratio, about 4 decigrammes of the tartarized antimony for his part each day. At the commencement of the experiment the dogs evinced a very strong appetite; which seemed to be increased by the use of the new condiment; but in a short time we witnessed very opposite results. Their voracity was replaced by a marked disgust, and on the 24th of January two of the dogs refused to eat. The proportion of antimony was now diminished to one half, but on the 28th the use of it was given up, the dogs did not touch it again in their food, and yet all of them showed a very marked leanness. Thus the antimonial regimen, which lasted ten days, furnished to each day about three grammes of the emetic.

After having given up the use of the antimonial, and returned to ordinary food, four of the dogs regained their appetites, and by degrees their former healthy condition; but there were two which could not overcome the effects of the metallic poison. They continued to exhibit a complete inappetency, were reduced to the last degree of emaciation, and on the third of February one of them died. Its body was extremely emaciated; the organs generally did not exhibit any great alteration except the liver, which was friable, and remarkable for its volume. It was weighed and compared with the total weight of the body we found the proportion to be as one to 12—(1:12.)

As this ratio appears to me very interesting and worthy of

note, I will state at once, that in the cases of dogs in a good state of health, we have found the following proportions between the liver and the mass of the body.

1:32
1:40
1:24

In regard to the distribution of antimony into the tissues of this first dog, it was general, without any apparent preference, for one or another organ: the liver, the muscular flesh, the coats of the intestines, the lungs, the brain—all seemed to be equally filled with it. The animal seemed to die from a sort of antimonial diathesis.

The second dog lived a few days longer, but died on the 10th February. During the few last days, he was affected with a continual nervous tremor; the hinder legs were also affected in a singular manner, they would all of a sudden give way, and the progress of the animal would be instantly arrested. Yet the organs did not present any striking alteration. The liver was friable, as in the preceding case, and voluminous, being in the ratio of the mass of the body of 1:10. The antimony was in this case also found in every part, but the brain seemed to have retained rather more than any other organ.

Our observations were now confined to the four surviving dogs. At the end of twenty days they were all restored, their appetite and natural vivacity having returned. One of them got away and was not again examined; another died suddenly. A post mortem examination showed that his death was occasioned by the passage of a lumbricus through the coats of the intestine into the peritoneal cavity in which it was found. A search for antimony, in this case, showed a very peculiar distribution of the metal. It was found in a very notable proportion in the liver and in the fat, but it was particularly accumulated in the BONES. It is necessary to state here, that this dog died of a *true accident* six weeks after having taken the antimonial, and that he had improved already a great deal in flesh. The antimony of course had lodged in organs where its retention was consistent with the regular exercise of all the functions. This remark acquires a peculiar value when we take into account the very similar distribution in the last two dogs which were killed, one after three and a half and the other after four months. I must declare also that the metal was in *these*, in as large proportions as in those which died during the very earliest periods of our experiments.

In the dog which was killed three months and a half after,

having ceased in the use of the antimonial, the metal was found in the largest quantity in the fat. The liver contained some of it as well as the bones and the other tissues; but 50 grammes of the fat furnished as much as 500 grammes of all the other tissues put together. The ratio of the liver to the general mass had been restored to the normal state of 1:27.

In the dog which for four whole months had taken none of the antimony the metal was found accumulated in the bones; the liver contained also a large quantity of it: all the other tissues gave very little traces of it. One hundred grammes of the bones yielded a quantity of the metal sufficient to cover over with perfect metallic spots the surfaces of three porcelain cups with a diameter of ten centimetres. The liver had attained a relative volume of 1:24.

I will conclude these observations, which so strongly attest the permanent retention of antimony in the living tissues, by mentioning the case of a young bitch to which the emetic was given during five days, and about fifteen days before the birth of her young ones. The dog and her young were killed immediately after birth, and the livers of the puppies were found to contain a notable quantity of antimony.

It is not an easy matter to know what conclusion should be deduced from the preceding experiments. Some of them introduce new elements into certain questions connected with medical jurisprudence, the value of which will be at once perceived; others belong rather to the domain of pathology.

Although the antimony seems to become organized, we cannot yet affirm that it is ever fixed in our tissues: neither must we suppose, in advance, that the facts revealed by the administration of antimony will also hold true with other metallic poisons. We must wait on experiment. So to affirm that a metal detected must have come from a recent ingestion, or to fix its origin and the moment of its introduction into the economy, it is necessary to wait: we must address ourselves to the task and vary our experiments.

In regard to the distribution of antimony in the organs, I have been struck with its relation to the physiological effects which have been mentioned above. Has the antimony penetrated simultaneously all the important organs, such as the lungs, the brain, and the coats of the intestines, the animal yields to the general poisoning, and seems to die all over at the same time from the effects of an extreme emaciation. Has the metal been lodged in the brain? we find the same general disease, but death takes place under an array of nervous symptoms which indicate the principal seat of the poison.

Let the metal, on the other hand, be deposited in organs of less sensibility and less general sympathy; such as the cellular and osseous systems, and the effects of the poison will soon be effaced, so as to lead us to suppose that it was entirely eliminated.

From this novel development in relation to poisoning by antimony, we are naturally led to suspect similar conditions in cases of poisoning with lead. May it not be by a kind of special localization that some privileged constitutions escape the poisonous effects of the last metal? and does not the concentration of morbid symptoms upon the abdomen, upon the nervous system, or upon the limbs, show that the lead occupies corresponding regions?

This is one of the numerous methods by which may be explained all those affections in which the presence of noxious principles, foreign to the economy while in the normal condition, is for the present suspected rather than demonstrated.

The enormous development of the liver, in consequence of the administration of the antimony, is also a fact which must not be passed over unnoticed. The percussion of the organs is at present practised with so much skill that we shall not be long in ascertaining whether the use of the antimony in man is attended likewise with the rapid enlargement.

Southern Medical Journal.

Rape under the influence of Ether.—A dentist in France has been lately brought to trial before the Court of Assizes of the Seine, on the charge of having committed criminal assaults on two young women, named Hyacinthe and Henriette, whilst they were in a state of insensibility, caused by the inhalation of the vapor of ether. From the nature of the details which had to be entered into, the trial took place with closed doors; but it transpired that the young women, who had gone to the house of the prisoner for the purpose of having teeth drawn, had been persuaded by him to inhale the vapour of ether, on the ground that it would prevent them from suffering pain; and when he had thrown them into a somnolent state, which, however, they said, did not prevent them from knowing what passed, he committed the criminal assaults complained of. One of the girls declared, that though at the time she knew well what was passing around her, she was totally unable to offer any resistance; and that at the moment the offence was committed, she became unconscious, and remained so for some time.

The prisoner's advocate said that the prisoner totally denied that he was guilty: and the learned gentleman argued that the effects produced by the inhalation of ether on the imagination were such that it was very probable that the girls might have taken their own hallucinations for facts. It, however, appeared that one of the girls, on her return home, had her dress disordered, her hair dishevelled, and was greatly agitated. The jury declared the prisoner guilty, and the Court condemned him to six years' hard labor at the hulks, but without exposure on the pillory. It was also ordered the *syndics* of the prisoners bankruptcy, his arrest having led to bankruptcy, should pay one of the girls, who is under age, a sum of 1,500f. as damages.—*London Med. Gaz.*, Nov. 1847.

The nature of Gen. Shields' *Wound.*—This gallant soldier has recently been the guest of our city, and we were called upon to dress his second wound: being detained, we found our friend, Dr. Dugas, in attendance when we arrived. It is known that Gen. Shields was wounded twice in the recent battles in Mexico. By the discharge of a *cannon* at Cerro Gordo, he was shot through the body and given over as certain to die. The General thinks it was a grape shot that traversed his chest. The ball has evidently passed between the *lungs, through the mediastina;* entering within the right nipple and passing out near the spine on the right side. He spate no blood, did not fall, and even gave the word of command after being wounded. In a few moments he was in indescribable agony, and prayed even for death, to be relieved.

None but a medical man can fully apprecite the nature of this wound, which has no parallel on record.—*Southern Med. and Surg. Journal.*

Chloroform.—In a paper published in the *Monthly Jour. of Med. Sci.*, for December, Prof. Simpson gives some further particulars in regard to chloroform, which we extract.

"*Physiological Effects.*—After the first two or three full inspirations, a feeling of warmth and excitation, radiating from the chest to the extremities; followed by whirring noises in the ears; a sensation of vibratory thrilling and benumbing throughout the body; with, betimes, rapid loss of sensation and motion, and at last of consciousness. Often before total unconsciousness supervenes, the patient, guided by instinct rather

than volition and reason, makes an effort to get rid of the inhaling vapor and handkerchief, as if it interfered with free respiration. During the full anæsthetic sleep produced by chloroform, sometimes no mental action goes on, or at least is remembered; in many others, the mind is active as in dreams. The respiration is usually at first soporose; the pupil sometimes natural, in others slightly contracted, in others dilated; the pulse is usually quickened ten or twenty beats at first, but afterwards falls to its normal rate, and, if the vapor is exhibited very long in very powerful doses, it comes down more and more below the natural standard; muscles of voluntary motion in general relaxed; more rarely cataleptic; still more rarely clonically contracted, as happens also occasionally with ether. In small doses, given slowly, its effects are exhilerating, and exactly like those generally following the inhalation of nitrous oxide gas.

"*Uses in Surgery.*—1. To relax the muscles in reducing dislocations, &c.: 2. To avert the sufferings attendant on deep probing, and other painful but necessary modes of diagnostic examination and dressing; and 3, and principally, to annul the pain of operations by the caustic, ligature, or knife.

"*Uses in Midwifery.*—To diminish and annul the physical pains attendant on labor, and more especially those which accompany the passage of the child's head through the pelvic cavity and outlet, (the second stage of Denman.)

"*Uses in Medicine.*—1. As an *anti-spasmodic;* as in asthma, laryngismus, tetanus, and other spasmodic diseases, &c. I have used successfully the inhalation of ether to arrest the paroxysms of hooping-cough, dysmenorrhea, colic, and the pains attendant on the passage of biliary calculi. In a case of the most severe, at the same time painful, spasmodic twisting and convulsions of the extremities attending a second attack of chorea, I allowed the patient ether inhalation; and sometimes she lay under its influence for hours, with relief while its action lasted, but generally without sleep. Latterly the chloroform has both relieved the spasms and their attendant pain and procured sleep.—2. As an *anodyne* or *narcotic.* In neuralgia, I have seen chloroform stop the fit at once; in two other cases the pain remained absent only while the chloroform acted. A patient suffering under severe delirium tremens had remained awake for about seventy hours; a half ounce of laudunum, given at a single dose, failed to produce rest; ten hours afterwards, the inhalation of chloroform was immediately followed by several hours of critical sleep. What cases of insanity would it benefit? I have exhibited it in full doses in some

cases of dementia, combined with excitement and wakefulness. They were all asleep in about a minute—and remained so for some time. In nothing does chloroform differ from ether more than in its soporific effects—when given in full doses and continued for sometime. 3. In small doses as a *diffusable stimulant;* to arrest the first commencement of ague, ephemera, &c.; in hysteria, &c. Perhaps it may be used by inhalation in small quantities when the stomach will not bear wine or other stimulants; in severe vomiting, fevers, &c. I have seen its inhalation at once dispel a sick headache.

"*Cautions.*—The liquid used should be sufficiently strong. Its proper sp. gr. is (as I have said) 1·480. It is certainly far too powerful an agent to be intrusted to nurses or unprofessional individuals. I have given it, up to this date, to above eighty persons, without the slightest bad result of any kind whatever in any one of them. The power, however, which we have with it, of bringing down the pulse, &c., shows that, if exhibited in too strong a dose, and given *uninterruptedly* for too great a length of time, it would doubtless produce serious consequences and even death. But, certainly, all its *full* anæsthetic and other influences may be perfectly obtained without allowing it to produce such depression as would be in any degree dangerous. Like many other agents, it may be powerful for evil as well as for good. I believe its great potency will be one great safeguard against its abuse.

"Its influence upon the blood, &c., the counter indications to its use, &c. &c., remain still to be ascertained."

American Jour. Med. Science.

Stomatitis Materna.—The sore mouth of nursing Women.—The editor of the *Buffalo Medical Journal*, Dr. Flint, makes the following valuable remarks on a disease of which we have lately met with cases.

"What is the pathology of the affection? We regard it as dependent upon anæmia, induced by lactation. The blood becomes impoverished by the continued drain upon its nutritive elements to form the lacteal secretion, and this is one of the local consequences which occasionally follow. In all cases that have fallen under our observation patients present unequivocal evidences of the anœmic state, and in proportion as this state has been relieved by appropriate measures, the affection of the mouth has improved. Why this local disorder should ensue as a result of anœmia we cannot tell, more than

we can explain why various other local disorders are attributable to the same morbid condition. Still less can we understand why this particular local disorder should be characteristic of the anæmia induced by lactation or pregnancy, and not often, if ever, occur as a consequence of anæmia induced by other causes. In other words the fact that this form of stomatitis is peculiar to nursing women, in the present condition of science, is inexplicable. Doubtless there exists some special connection between the disease and the kind of impoverishment which the blood undergoes in consequence of the withdrawal from this fluid of the elements which go to form the lacteal secretion; but our knowledge of chemicovital chemistry does not suffice to trace the circumstances which constitute this special connection.

This is by no means the only instance in which the mucous membrane takes on disease as a result of prior deterioration of the fluids. We may instance the stomatitis which occurs in the last stages of pulmo-tuberculosis, and other chronic diseases; softening of the mucous tissue of the stomach and intestines from inanition; scrofulous ophthalmia; perhaps we may add the follicular affection of typhoid fever, &c.

That the affection has seemed to arise from miasmata is explicable, when we consider that to the latter alone anæmia is often referable, and consequently the effect of lactation is increased by conjunction with miasmatic influences. That it is wholly due to miasm is, however, sufficiently disproved by the fact that it occurs in localities where miasmatic emanations are unknown.

If this view of the pathology be correct, the proper therapeutical principles are readily deducible. The seat of the disease is not in the mouth, but it is a blood disease. Hence, we should expect, what experience declares to be the case, that collutories are of little or no avail. To reach the *fons et origo* of the difficulty, the blood must be restored to a healthy condition.

The first question of the practitioner is, can this be accomplished while the remote cause of the disease (lactation) continues. Our own experience teaches us that in the large proportion of cases, weaning becomes necessary. This affection frequently does not occur until the blood has undergone deterioration to such extent that restoration is impossible without removing the remote cause. Whenever the patient is much prostrated, and, especially, if diarrhœa co-exists, the lacteal secretion should be allowed to cease without delay.

In most cases, however, it will be proper to give remedies

a fair trial before deciding on the necessity of weaning. And, if we mistake not, the success of the treatment dictated by the foregoing view of its pathology, will, in not a few instances, strikingly exemplify the correctness of the latter. The treatment is that called for by the anæmic state, viz: nutritious diet, especially animal food and ferruginous tonics. Should the bowels be costive, or any functions be disordered, they will claim appropriate measures, but the grand object is to improve the powers of assimilation, and thereby restore the healthy condition of the blood. A great difficulty with a view to this object arises from the inability of the patient to take proper food in proper quantities, owing to the tenderness of the mouth. We have known patients who constantly suffer from hunger, which they would endure, rather than incur the pain incident to satisfying fully the appetite. Local applications should be tried, and, by alleviating the soreness, they may conduce to permanent benefit, by permitting the patient to take more nourishment. To the local remedies which are mentioned in the foregoing article, we would add, a solution of tannin in port wine, used as a collutory, of sufficient strength to cause a decidedly astringent effect, without occasioning much pain. We have employed this remedy, of late, in some cases, with advantage.

Of the tonics to be prescribed, there are various preparations which are appropriate, and the peculiarities of different cases will probably be suited by different forms. The citrate of iron, in combination with quinia, given in concentrated solution, as suggested by Dr. Meigs, has been a favorite prescription with us, and we know of no form more generally applicable.

Exercise in the open air appears to us one of the most important elements in the treatment.

Frequently the child may be partially weaned. Some mothers are accustomed to nurse frequently, or almost constantly during the night time, when loss of sleep is to be added to the cause of the disease which is more direct in its operation. The foolish custom should be interdicted.

Should these measures fail, weaning should be directed, and, in nearly all cases, the disease rapidly subsides so soon as this is done.

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CHLOROFORM.

Although we have already devoted so much of our present Number to the subject of chloroform, we propose giving in this place a few additional details on the same subject, persuaded that our readers cannot help participating in the deep interest so generally felt in this new anæsthetic agent. If the profession in America were slower than their brethren in Europe to adopt ethereal inhalation, we believe the same thing cannot be said of their disposition to test the virtues of chloroform. The cost of the article, which in London and Paris was so great that it was feared that it must seriously limit its application, is already reduced to a point in this country which places it within the reach of all, and favors its indiscriminate use by unprofessional as well as professional persons. The result of this will be, that we shall learn in the shortest possible period the capacity of the agent for mischief as well as for good. When first brought into notice, by Prof. Simpson, chloroform sold in London at four shillings, and in Paris at seventeen francs, an ounce; the same quantity is now sold in Louisville at less than thirty cents.

Physiological Action of Chloroform.—We have repeatedly inhaled the protoxide of nitrogen and the vapor of chloroform, and our first

sensations under the influence of the two were identical; they were of the most delightful character, and we found it difficult to resist the propensity to repeat the inhalations again and again. After a few inspirations of the chloroform, we lost our consciousness, and fell into a pleasant sleep, a state which we have never succeeded in inducing by the exhilarating gas. From the experiments made by a committee of the Medico-Chirurgical Society of Edinburgh, the physiological action of chloroform would appear to be precisely that of ether. They produce loss, 1st, of the cerebral functions; 2d, of the spinal functions; and 3dly, of those of the medulla oblongata. A smaller quantity of chloroform is required to produce the desired effect, and the unconsciousness is obtained by it more rapidly than by the use of ether; but whether the effects are more or less persistent, is a question not yet decided among experimentalists. Roux believes they are less so, but Velpeau thinks the insensibility is more prolonged. Longer experience and more trials on subjects of every variety of temperament, are required to settle this point. We have remarked that the exhilarating effects are intermitting, the subject, after a moment or two of inactivity, growing hilarious and noisy, again becoming lethargic, to start up soon again, and sing, dance, recite, laugh, or cry, with as much vivacity as ever. Amussat has found in animals and in man that chloroform, like ether, causes the arterial blood to assume a dark color, and to resemble closely venous blood. This condition of the circulating fluid is more apt to be produced when the vapor is inhaled from an apparatus which limits the supply of atmospherical air. When breathed from a sponge, or a handkerchief, the blood is less affected, and the subject is in no danger of falling into a state of asphyxia. For this reason all instruments for administering these vapors are now generally rejected, and the simpler appliance of the sponge or handkerchief has taken their place.

The advantages of chloroform over ethereal inhalation are so decided, that the former must soon supersede the latter in general practice. Not only are the effects induced by a smaller quantity, and in a shorter time, but its vapor is pleasanter to the taste, and less irritating to the lungs; and when sensibility is restored, it is without the headache and nausea which so often follow the administration of ether. We are among those who regard the letheon as a precious boon to the human race, and there are cases in which it will probably continue to be employed both by the surgeon and physician, but its great merit, we must believe, consists in having led to the discovery of the anæsthetic virtues

of chloroform. Physicians have used ether inhalation in a great variety of diseases, and the testimony of some of the most eminent among them is, that it is applicable in every form of pain incident to the human frame. In all spasmodic diseases especially, its effects are most grateful. The experience of physicians with chloroform is necessarily still very limited, but enough has been shown to justify the most extensive application of it to diseases marked by acute suffering.

Dr. Simpson, the distinguished Professor of Midwifery in the University of Edinburgh, was one of the first to apply ether inhalation in parturient women, and has been the most zealous advocate of the practice. In a late publication on the subject of chloroform in obstetric practice, he concludes the history of several interesting cases, in which insensibility was induced by this agent, with the following remarks:

"The preceding instances afford, perhaps, a sufficient number of examples of the use of chloroform in natural labor. In these and in all others which I have seen, or that have been reported to me, the immediate effects of the chloroform have been delightful. The mothers, instead of crying and suffering under the strong agonies and throes of labor, have lain in a state of quiet, placid slumber, made more or less deep at the will of the medical attendant, and, if disturbed at all disturbed only unconsciously from time to time by the recurring uterine contractions producing some reflex or automatic movements on the part of the patient—like those of a person moving under any irritation of the surface, or from the touch of another, though still in a state of deep sleep. Nor have the ultimate consequences and results been less happy. No difficulties have been met with in the third stage; and the uterus has contracted perfectly after delivery. I never saw mothers recover more satisfactorily or rapidly,—or children that looked more viable. And the practice is not a great blessing to the patient merely, it is a great boon also to the practitioner. For whilst it relieves the former from the dread and endurance of agony and pain, it both relieves the latter from the disagreeable necessity of witnessing such agony and pain in a fellow-creature, and imparts to him the proud power of being able to cancel and remove pangs and torture that would otherwise be inevitable. It transforms a work of physical anguish into one of painless muscular effort; and changes into a scene of sleep and comparative repose, that anxious hour of female existence, which has ever been proverbially cited as the hour of the greatest mortal suffering."

But, he adds, "the effects of the superinduction of anæsthesia in parturition are, if possible, still more marked and beneficial in cases of morbid labor and operative delivery;" in illustration of which he gives

the history of several cases of turning, of the application of the forceps, and of embryulsio.

In an appendix to this pamphlet of Dr. Simpson's, which has been republished at Boston, Dr. Warren's more extended experience with chloroform is given. He says:—"The effects of the new anæsthetic I have had opportunity of observing in a considerable number of operations, and among these anchylosis, strangulated hernia, amputation, removal of tumors, etc. It was a great satisfaction to me to do an operation for strangulated hernia—an operation which I have so often seen attended with severe distress—on a gentleman with a bad strangulation, who, during the ten minutes required, lay as perfectly tranquil as a subject on the dissecting table of the anatomist, and who directly after its completion awoke in his right mind, and with no knowledge of the operation. This gentleman accidentally swallowed about half a teaspoonful of pure chloroform without any material ill consequence."

Dr. Channing has a letter in this appendix in which he states, that he is about to put to press a volume on the employment of etherization in childbirth, and adds that he has witnessed the happiest effects from chloroform "in all cases in which he has employed it."

Dr. C. T. Jackson, whose name is connected with the discovery of the letheon, bears the same testimony to the virtues of chloroform, and adds the following remarks as to a more diversified application of the agent:

"I have administered both chloroform and sulphuric ether vapors to the insane with very agreeable effects, the patients falling into a deep sleep and gaining, as it were, a short respite from their distressing delusions which had haunted them continually and prevented sleep. This period of rest was found to be quite salutary, and it is probable that critical changes in those troubles may be induced by this new method of treatment. In one case, that of a furious maniac, who had torn his clothes entirely from his body, and whom we took from his cell and treated with sulphuric ether vapor, the relief by inhalation of the ether was most remarkable. This patient who had not slept for several nights, was at once subdued by this treatment and put into a deep sleep of insensibility and laid on his bed where he remained asleep all the afternoon and evening of that day, and became quite tranquil when he awoke and has up to the latest accounts not suffered any new paroxysm. In the hands of skilful Physicians, for the insane these remedial agents may prove a great blessing.

"I have long since urged the application of etherization in cases of intermittent fever, but have not yet seen any account of its trial. I would now renew my invitation to physicians in the south and west to

try both chloroform and ether in that troublesome disorder. If the chloroform will break the chills and bring on, as it probably will, a copious perspiration (one of its common effects) it will prove a great blessing, and the remedy will be found quite portable, since only thirty or forty drops of this agent is required to produce its proper effects."

Professor Gross has used the chloroform successfully in several surgical operations, and Professor Miller has employed it with the happiest results in a case of difficult labor. But we will not take leave of the subject without adding, that a woman is reported to have died in the hands of a Dentist, in Cincinnati, from the effects of this agent.

It is important to employ a genuine article, since the agreeable action depends upon its purity. A test, easy of application, is said to consist in dropping the chloroform into water, mixed with an equal quantity of sulphuric acid. When perfectly pure it retains its transparency as it sinks into the water, but when otherwise it becomes cloudy.

PHYSIOLOGICAL TEMPERANCE SOCIETY OF THE UNIVERSITY OF LOUISVILLE.

We are happy to be able to state, that this society, after the lapse of five years, is still active and prosperous. Its meetings are held once a fortnight in the Hall, when a lecture is delivered, on the pathological effects of alcoholic drinks and other narcotic stimulants. Seven hundred and ten medical students have become members of the society. On the 14th of last month, an excellent annual discourse was delivered by Dr. Hugh Rodman, of Lagrange, in this State, one of the original members of the society. We cannot but regret, that the professors of all our schools, do not promote the establishment of similar associations; so as to familiarize the minds of their students with the whole subject of intemperance, as a cause of many diseases of the body and disorders of mind; and thus greatly increase their usefulness, while they would be themselves, secured against temptation.

DEATHS IN THE MEDICAL CLASS.

Two deaths have occurred in the session which is now closed. This is at the ratio of 1 in 133, for the year—two-thirds of one per cent. per annum. This rate of mortality is certainly low; and when we recollect, that almost all the students are from latitudes south of Louisville, down to the thirtieth degree, we must conclude that a winter resi-

dence in colder climates, is not so dangerous to southern constitutions as many have supposed. We have observed, in fact, that many young men improve in health and vigor, while sojourning here from October to March. When Dr. Cartwright lately visited Louisville, he was on a northern winter tour for the recovery of his health and strength—seriously broken down by his labors in the south, and he declared that both had been much improved.

SHIP TYPHUS FEVER IN NEW ORLEANS.

The newspapers announce an extensive prevalence of this fever among the European immigrants of New Orleans. During the summer and early autumn of last year, the disease was by no means unknown in that city; but immigration was, of course, limited, for the St. Lawrence was then the channel, and Quebec, or, rather, its quarantine ground, thirty miles below, the point of debarcation. For half the year, *that* entrance is closed by ice; and during most of the other half, the climate of the Gulf of Mexico and the lower Mississippi, renders admittance, into our country by *that* route, extremely hazardous to foreigners, on account of yellow fever. Thus, through the hot season, the chief current of immigration strikes our shores in the north—through the cold season, in the south. It has become perpetual, and in volume is on the increase. A vast majority of the immigrants, especially of those from Ireland, are miserably poor, and dirty; they arrive with typhus, generated on the voyage; and they communicate it to those who receive and nurse them. It appears by the New Orleans Picayune of the 11th of February, that there were, at that time, more than five hundred cases of ship fever in the crowded wards of the Charity hospital; which, thus, seems likely to become as distinguished, in reference to typhus, as it has long been, in reference to yellow fever. Two of the Sisters of Charity, who nobly devote themselves to the sick, had fallen victims, and one of the professors of the Louisiana Medical School and several of its pupils, from laboring in the wards, had also been ill.

When and how will this alarming state of things come to an end? Is it not the duty of our Federal Government to interpose? We might insist, that the Governments of Europe shall so regulate the transportation of emigrants from their ports, as to prevent, if possible, the devel-

opment of typhus among them. This, doubtless, could be accomplished, by diminishing the number who are, at present, crowded on board each ship; secondly, by securing cleanliness and change of apparel and bedding; thirdly, by free ventillation; fourthly, by an abundant supply of healthy food; and lastly, by preventing the embarcation of any who are in the forming stage of the fever. Moreover, if there be any efficacy in Burnett's, or Ledoyen's disinfecting compounds, emigrant ships are the places, in which above all others they should be employed.

If the governments of the kingdoms of Europe, would not, under due representations from our own, establish these or other sanitary regulations, the latter should prohibit the landing of all immigrants, from ships, which do not conform to them. As to the city of New Orleans, she ought, in immediate self-defence, to erect sheds, upon the coast above or below the city, and not permit immigrants to enter it, until they shall have passed several weeks in those temporary residences, under such hygienic discipline as her medical advisers might direct. The necessity for this will appear still more obvious on reading the following extract from the publication to which we have referred:

"The board of directors of the hospital have advices from Europe to the effect, that within the current year some forty thousand emigrants will sail for this place, if shipping can be had. Of these, it is judged, from the experience of the past year, that ten thousand will find their way to the hospital immediately upon landing. Some permanent arrangements should be made for this influx of disease; meanwhile, the present condition of the city requires immediate provision. The next arrival from Europe may overflow the hospital and infect the city."

One may at first be surprised, that so great an immigration should take the circuitous New Orleans route, but we must remember, that numerous ships come to that port for cotton, with little else than ballast, and that it is in them, at a low rate, that the poor emigrants come over.

SECOND MEDICAL SCHOOL IN LOUISVILLE.

The attempt to establish a second medical school in this city, (announced in our last number) seems for the present to be a failure. The bill for a charter, was lost in the Senate, by a vote of 18 to 10. The

application was then transferred to the lower House, and referred to the Committee on Education, who reported the same bill; but up to this date (February 26th) the report has not been called up; and the Legislature, by a joint resolution, is to adjourn on the 28th; we may presume that the friends of the measure will not make any further attempts to procure its passage at the present session. This postponement will afford time for the people of Louisville and of the State of Kentucky, to ponder on the question, whether, if four hundred passengers wished to ascend the Falls, it would be better to divide them between two steamboats of feeble power, or keep them in one, of such size and strength, that it could stem the current, as successfully with the whole as a part. They who think, that, referring equally to the interests of society in the west, and to the prosperity of the people of Louisville, a second school ought not to be established, *at this time*, have nothing to fear, and much to expect from a full and scrutinizing investigation, and such an one, we hope, will be made.

EXTENSION OF THE MEDICAL SESSION IN OUR UNIVERSITY.

The annual advertisement of the Faculty, appended to the Catalogue of Students just issued by the Dean, announces that the next session will commence on the 16th day of October; which being Monday, and occurring just three weeks before the first Monday of November, (the 6th day) will make the next session twenty weeks instead of seventeen. We understand that it is the intention of the Faculty to commence the session, following the next, on the first Monday of October, thus adding a month to the old term. We record this attempt with heart felt pleasure, for our short sessions, in the United States, may justly be considered, as adverse to adequate preparation, for graduation.